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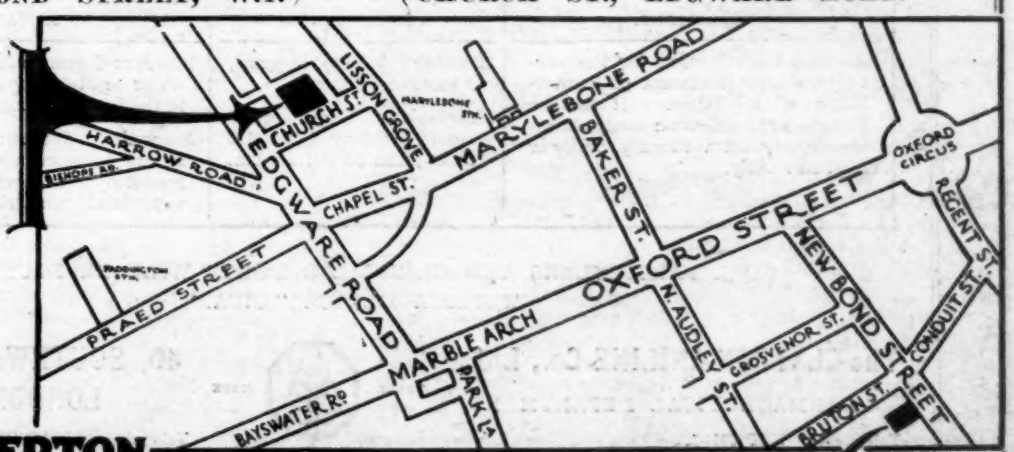

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Remarks ON LOOSE BODIES IN JOINTS.

BY

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IT is reasonable to believe that loose bodies in joints must have been familiar to the ancients, for from time immemorial the limbs of man have been subject to injuries of unchanging type. But there is no record of an attempt to remove a loose body by operation until we reach the Middle Ages, when the incomparable Ambroise Paré[1] (1558) extracted a typical specimen from a cystic swelling which communicated with the knee-joint.

In more modern times considerable attention has been directed towards the elucidation of the pathogenesis of loose bodies, and the subject is now endowed with a literature of formidable proportions. A brief review of this historical phase will serve as an introduction to this communication, which will deal more especially with certain practical aspects relating to the diagnosis and operative treatment of loose bodies in the knee-joint.

In 1875 Volkmann[2] presented a broad classification in which loose bodies were divided into two main groups; this is still in use. Group I included the bodies found in diseased joints, and Group II those found in otherwise healthy joints. The distinction between the two is in some respects artificial, but the outstanding contrast is emphasized in proper perspective.

A third group, which does not entirely conform to the requirements of the classical schema, is sometimes recognized. In this are included the loose bodies which develop primarily as synovial chondromata, a process which is little understood, but which merits recognition as a pathological entity.

PATHOGENESIS.

Group I.—Diseased Joints.

There is no mystery in the origin of the loose bodies which make their appearance in joints which are frankly diseased. They result simply from the separation of small portions of the changed articular surfaces. Thus, in osteo-arthritis, marginal osteophytes may sometimes become detached, either spontaneously or after a trivial injury. We must recognize, however, that in a certain proportion of joints which show comparatively mild osteo-arthritic changes accompanied by one or more loose bodies the arthritis is really a secondary development. On the whole, in osteo-arthritis loose-body formation is not very common. In neuropathic arthritis—for example, the familiar Charcot's joint of tabes—the somewhat bizarre hypertrophic and degenerative changes offer an ideal background for the wholesale exfoliation of articular fragments. Under such conditions loose bodies are usually of minor pathological and surgical importance.

In this group of diseased joints the majority of the patients are past middle age, and the loose bodies are almost invariably multiple.

Group II.—Otherwise Healthy Joints.

The pathogenesis of the bodies which form in joints apparently sound to ordinary clinical tests cannot be expounded in so simple a fashion. The essential clinical features have long been defined, the more important being: (1) the comparative youth of the patients (15 to 25 being the age of choice); (2) the high incidence in the male sex; (3) the predilection for the knee-joint—with the exception of the elbow, loose bodies are extremely rare in other joints; (4) the bodies are more commonly single than multiple.

It was obvious to the earliest observers that this type of loose body also was derived from the articular surface (Monro, 1762[3]), and when the patient gave a history of antecedent trauma the method of production seemed to be clear. But when, as not infrequently happened, there was no record of injury a different explanation was demanded.

Among the first to suggest an alternative hypothesis was Sir James Paget.[4] In 1870 he removed a loose body from the knee-joint of a Harrow schoolboy. Histological examination of the specimen showed that it had been detached from one of the femoral condyles. In the origin of this body Paget saw yet another example of a process for which he had coined the term "quiet necrosis." In his view a trivial unnoticed injury had produced on the femoral surface a limited zone of necrosis. In due course a cartilaginous flake had become separated, and after a time had assumed the typical round, smooth appearance of the mature loose body. It was not until 1888 that Koenig[5] introduced the term "osteochondritis dissecans" to describe the exfoliation of fragments from the articular surfaces of the knee-joint. But Koenig himself did not accept trauma as the first stage in the sequence of events which culminated in the development of such loose bodies.

In the later work of the German school there has been an attempt to extend Koenig's thesis by providing an explanation of quiet exfoliation without invoking trauma as a necessary preliminary. Considerable emphasis has been laid on the observation that osteochondritis dissecans has a favourite site in the knee-joint. This is a small area on the lateral aspect of the mesial femoral condyle, just in front of the attachment of the posterior crucial ligament (Fig. 1). The area is supplied by a special vessel—the arteria genu media—which in the injection experiments of Ludloff[6] appeared to be an end artery. The position of this vessel at once suggested its vulnerability, and it was concluded that thrombosis might easily be produced, either by injury or after the lodgement of a tiny embolus. In this way a zone of "quiet necrosis" would be determined. Unfortunately for the further exposition of such a thesis, the more recent injection experiments of Nüssbaum[7] show that the arteria genu media anastomoses freely with the vascular supply of surrounding areas.

FIG. 1.—Interior of knee-joint, showing vulnerable area on internal condyle supplied by arteria genu media.

Axhausen[8] (1920) has also supported the quiet necrosis theory from the experimental side. In his conception, the first stage in loose-body formation is the occurrence of a small embolic infarct, which includes a wedge-shaped area of subchondral bone. Later the infarct becomes shut off from the living bone by the ingrowth of granulation tissue. Detachment does not occur for some little time, but finally the fragment is extruded into the joint cavity and enters on its career as an independent loose body. But Phemister[9] has obtained very different results after the experimental production of localized foci of aseptic necrosis on joint surfaces, for he finds that the necrotic areas are not exfoliated. In spite of much conflicting evidence at the present time it is generally agreed that trauma plays a dominant part in the production of the ordinary loose body in the so-called normal joint. In the knee-joint a considerable area of both femoral condyles is repeatedly exposed to the risk of direct impact, and it is conceivable that a localized infraction of the joint surface may be induced by comparatively trivial violence. Such an injury may be followed by complete healing or, on the other hand, by an immediate, or delayed, separation of an articular fragment. It is also probable that traction exerted through the medium of the posterior crucial ligament may tear off a flake in the intercondylar region. Freiberg[10] believes that an unusually long internal tubercle of the tibial spine may impinge on the crucial ligament when the knee is flexed and externally rotated. It has also been suggested that the tibial spine itself may come into contact with the mesial condyle and thus act as the prime detaching force (Roessner[11]).

Although attention has been focused on the vulnerable intercondylar region, it must be realized that a considerable proportion of loose bodies in the knee do not originate from this site. Indeed, it is probable that the majority represent detachments from other parts of the condylar

[3464]

* A paper read before a conjoint meeting of the Manchester and Liverpool Medical Societies at the Liverpool Medical Institution.

surface. Patches of early erosion are not infrequently seen in exploratory operations on the knee for the removal of injured semilunar cartilages.

Group III. Synovial Chondromata.

As long ago as 1834 Benjamin Brodie[12] surmised that certain types of loose body originated in the synovial membrane. These are now separately classified under the term "synovial chondromata," and are believed to develop from small nests of cartilage cells commonly found in normal synovial villi. Little is known of the conditions which determine such a change, but it is probable that the bodies are actual tumours. Although small isolated synovial chondromata may be found in osteo-arthritic joints, or in joints presumed to be healthy, the loose bodies which fall into this group are generally present in considerable profusion. Where the synovial membrane is invaded widely, the condition has been termed "osteo-chondromatosis" (Henderson[13]). Many of the synovial chondromata remain attached for an indefinite period, the number of free loose bodies being small.

Changes in Loose Bodies during and after Separation.

It is well recognized that, irrespective of their mode of origin, many loose bodies do not become completely detached for some considerable time. During this intermediate stage both the cartilaginous and bone elements undergo changes which are characteristic of living tissue; but after the body has broken away from its vascular pedicle the bone cells die. The cartilage cells, however, continue to live and proliferate, nourished by the joint fluid (Fisher[14]). The original hyaline cartilage may be replaced by fibro-cartilage (Phemister, loc. cit.). After a sojourn in the joint cavity the loose bodies tend to increase in size and take on a uniform shape and appearance.

A loose body may acquire a secondary attachment to the synovial membrane, and so for a time its migratory habits are suspended. In somewhat similar fashion a group of bodies may accumulate in a pocket which ultimately becomes shut off from the joint cavity proper. An occasional hiding place for a solitary body in the knee-joint is a pouch connected with the coronary attachment of the semilunar cartilages.

LOOSE BODIES IN THE KNEE-JOINT.

A full description of the symptomatology of loose bodies in the knee-joint lies outside the scope of this paper. It is sufficient to state quite broadly that the clinical picture is embodied in the familiar syndrome of "internal derangement" of this joint. In the so-called normal knee this syndrome is usually presented in clear-cut fashion; in a diseased joint other long-standing symptoms may obscure the signs which the loose bodies themselves evoke.

There are, of course, many points of clinical interest which distinguish loose bodies from other more common causes of internal derangement—for example, injuries of the semilunar cartilages. Where the loose body has been actually palpated the problem is solved; but in the majority of instances the differential diagnosis must rest on the radiographic findings.

Once the presence of a loose body has been established, apart from certain reservations as to age, economic circumstances, and the existence of advanced joint disease, operative removal is indicated. But before the knee-joint is opened the surgeon should be in possession of information which enables him to define both the exact number of loose bodies and their distribution in the joint cavity. This means that as a routine the knee should be radiographed from many angles, and in the position of flexion as well as extension. In addition, stereoscopic views are often invaluable.

Such requirements raise the important question of the interpretation of the radiographic appearances of loose bodies in various phases of their development.

RADIOGRAPHIC DIAGNOSIS.

1. The Loose Body before Separation—Osteochondritis Dissecans.

We have already referred to the stage when the developing loose body is still attached by a pedicle. In certain positions of the joint the fragment lies snugly in its fossa. At other times it flaps about on its hinge, but, although its range of movement is small, it may give rise to the characteristic symptoms of internal derangement. There is a danger that a pedicled fragment, unless temporarily displaced from its bed, may be overlooked in conventional radiograms; but that the radiographic evidence of osteochondritis dissecans may be clear-cut is well exemplified in the following case.

Some four years ago I saw a public school boy, aged 15½, with a typical history of recurring attacks of transitory "locking" of the knee, following a direct contusion sustained at football two years before. The boy's family doctor had felt a loose body on the outer aspect of the knee during two of the attacks, but when I examined the joint it was "silent." The radiograms (Figs. 2 and 3) showed an interesting combination of lesions:

FIG. 2.—S. T.; from a radiogram of knee-joint, showing (*a*) loose body, (*b*) patch of osteochondritis dissecans.

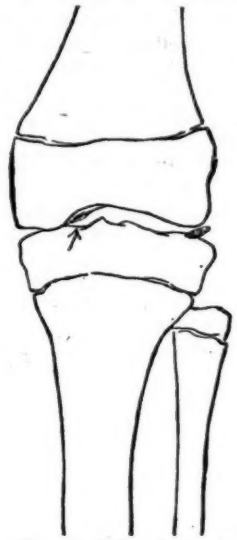

FIG. 3.—S. T.; from an antero-posterior radiogram of knee.

(*a*) a definite loose body lying on the outer head of the tibia; and (*b*) an irregular patch in the intercondylar region at the classical site for osteochondritis dissecans. The appearance here suggested that a plaque of the articular surface was in process of separation.

Removal of the loose body was advocated, but for certain reasons the operation was postponed for a year, during which time further attacks of locking occurred.

When the knee-joint was opened a loose body the size of a threepenny-piece was seen, attached by a slender pedicle just in front of a pit on the lateral surface of the inner condyle. After its removal a search was made for the rounded loose body which had always shown up well in the radiograms. This was discovered lying on the outer head of the tibia, but enclosed in a synovial pocket and obviously incapable of shifting sufficiently to account for the symptoms of locking.

This case is an excellent example of the classical osteochondritis dissecans following a known injury, and with the loose body incompletely detached but already causing symptoms. It is further interesting in that a second loose body, obviously of an older "vintage," was at first assumed to be the sole cause of the derangement, and yet was proved to be incapable of free migration.

2. The Loose Body Invisible.

A loose body may also escape recognition after complete detachment. This happens when its lime content is small, and particularly when the faint image is superimposed on the denser shadow of the femoral condyles. But this should be a rare occurrence under the conditions of modern radiographic technique, when the clinical signs have led to a presumptive diagnosis of loose body.

3. Multiple Bodies.

It does not seem to be widely recognized that operations for the removal of multiple loose bodies are by no means uncommon. I find in my own clinical material that the incidence is between 40 and 50 per cent. For this reason the pre-operative counting of multiple loose bodies is a

most essential part of the radiographic diagnosis. But the mere enumeration is not sufficient; the exact localization of each body or group of bodies, with reference to the internal anatomy of the knee-joint, is also required.

It will be remembered that the joint cavity is divided into five distinct but intercommunicating compartments—three in front and two behind. These are the *supra-patellar* pouch; the *antero-mesial*, the *antero-lateral*, the *postero-mesial*, and *postero-lateral* compartments. It is important also to realize that each pouch allows of separate exploration through a relatively small capsular incision.

A loose body originating in one of the anterior compartments finds a free passage from one to another, but does not ordinarily make its way into a posterior compartment, as the connecting path is somewhat circuitous. Free communication between the two posterior pouches is, for practical purposes, blocked by a mid-line synovial partition connected with the posterior crucial ligament, which is attached in the intercondylar region, so that a loose body originating in either of these pouches tends to have a comparatively small range of excursion.

It is a common experience to find multiple loose bodies distributed in both the anterior and posterior divisions of the knee-joint, and, in the absence of definitive information, it is an easy matter to explore such a joint and to leave one or more bodies behind. Such omissions have been brought forcibly before my notice in my earlier operative experience in this field.

Wherever possible the enumeration and localization of each separate group should be carried out the day before the operation. The joint should never be explored on information several weeks old, as a redistribution of the bodies may occur during the interval. The patient himself is occasionally conscious that the bodies have moved, and it is always wise to question him deliberately on this point.

Exploration of the Knee-joint for the Removal of Loose Bodies.

The removal of a solitary loose body which has been accurately localized is an operation of extreme simplicity. The appropriate pouch is entered through a small capsular incision, which may be little more than a mere stab cut. In such a procedure the joint disturbance is negligible, and full recovery of function is seen within a few weeks.

I hold very strongly that the operative treatment of multiple loose bodies should be based on the same conservative principle. Each pouch should be invaded separately. For this an equal number of short skin incisions may be used, or alternatively a convenient flap, which provides access to two or more compartments simultaneously. The vast majority of multiple loose bodies can be dealt with in this manner with great advantage to the patient and the future of his knee-joint.

In exceptional circumstances it is advisable to display the interior of the knee-joint more completely, as in the removal of synovial chondromata when present in large clusters. This will naturally be accomplished by one of the recognized types of full arthrotomy, in which the patella is either divided in the mid-line or displaced to one side or the other. It must be remembered that such an exposure allows an inspection of the three anterior pouches only. The posterior compartments must of necessity be approached separately.

The value of arthrotomy in miniature will be further appreciated when it is realized that in certain joints, after removal of multiple loose bodies, a fresh "crop" may develop at some future date and re-exploration become necessary.

Compartmental Surgery of the Knee.

The removal of multiple loose bodies illustrates what may be termed the *compartmental* surgery of the knee-joint. In the exploration of the different pouches there are certain special anatomical and technical peculiarities to which brief reference may now be made.

1. *The Anterior Division of the Knee-joint.*

(*a*) The antero-mesial and antero-lateral pouches are frequently entered for the removal of injured semilunar cartilages, operations which are amongst the commonplaces of joint surgery. Identical exposures are used for the extraction of loose bodies. It may be remarked that the typical plaque of osteochondritis dissecans on the inner condyle, and the flapping, loose body are best seen and dealt with from the antero-lateral pouch.

(*b*) The supra-patellar pouch is inspected through a short vertical incision in the rectus femoris. The removal of a loose body from this pouch via a stab wound is reminiscent of the old style of operation of the pre-antiseptic era.

2. *The Posterior Division of the Knee-joint.*

This is a less familiar hunting ground, as the pouches are rarely explored except for the extraction of loose bodies.

(*a*) The postero-mesial pouch is exposed after defining the posterior edge of the internal lateral ligament and retracting the sartorius as it skirts the posterior border of the femoral condyle. (Fig. 4.) With the knee flexed to a right angle the pouch bulges prominently, and when opened by a vertical cut shows a capacious interior. Access to the postero-lateral compartment is barred by the median partition already described.

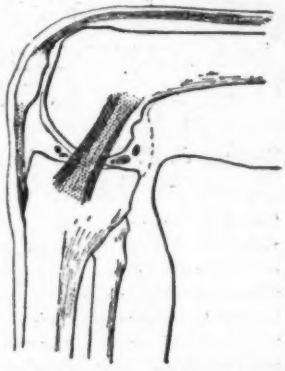

FIG. 4.—Diagrammatic view of antero-mesial and postero-mesial pouches with loose bodies *in situ*.

Bodies which occupy the posterior compartments often tend to disappear into the intercondylar region, and are occasionally most difficult to find. When present in considerable numbers, small groups may become encysted in synovial "nests," which must be opened before the bodies can be extracted. Illumination of the interior of the pouch by means of a head lamp is useful, if the search tends to become prolonged. If the number removed does not correspond to the pre-operative count, it is a wise precaution to syringe out the pouch with saline under considerable pressure. An elusive body may then float into view. This manœuvre is, of course, applicable to all pouches. Movements of the knee, and particularly rotation of the tibia on the femur, sometimes helps to dislodge a concealed body.

(*b*) The postero-lateral pouch is opened behind the external lateral ligament, and the same principles are again illustrated.

(*c*) *Popliteal Approach.*—There is an alternative method of approach to the posterior division of the knee-joint which was advocated some years ago by Brackett and Osgood. In this a mid-line incision is made over the popliteal space, and after displacement of the tibial nerve and popliteal vessels the joint capsule is opened. Either pouch may be opened separately or the intercondylar fossa is readily displayed. Where there is a temporary encystment of a group of loose bodies in a pocket connected with the median partition the popliteal approach offers many advantages.

Conclusions.

1. When the symptoms of internal derangement of the knee suggest the presence of a loose body, a systematic radiological examination is essential. This should be carried out with a view to the possible demonstration of (*a*) an area of osteochondritis dissecans; (*b*) a loose body in process of detachment; or (*c*) one or more loose bodies free in the joint cavity.

2. When a *single* loose body is demonstrable the existence of additional bodies should always be suspected.

3. *Multiple* loose bodies demanding removal are common. Before operation is undertaken they should be accurately counted and their exact location defined with reference to the various joint compartments. This information should be obtained during the few days immediately preceding the operation.

4. Given an accurate pre-operative diagnosis, the removal of multiple loose bodies through an extensive arthrotomy is rarely necessary. The bodies should be extracted in turn from the various pouches, which are entered by means of short capsular incisions. With such a technique there is a

minimum interference with the knee-joint, and rapid return of function is favoured. (Arthrotomy in miniature.)

5. A *complete arthrotomy* should be reserved for knee-joints in which loose bodies occur in considerable profusion in the three anterior pouches.

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An Address
ON
THE TREATMENT OF OBSTRUCTIVE LESIONS OF THE COLON.*

BY

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TWENTY years ago chronic obstructive lesions of the colon were rarely, if ever, diagnosed, except as the result of an operation for acute obstruction or a *post-mortem* examination. At the present day the majority—I would almost like to say the great majority—of such lesions are diagnosed and treated before the onset of acute symptoms. Statistics on such a subject are difficult to obtain, but a paper recently published by Burgess of Manchester contains figures which illustrate this point.[1] Out of 485 cases of cancer of the colon admitted between the years 1913 and 1922 to the Manchester Infirmary 173 had acute obstruction—that is, 64.4 per cent. were diagnosed before acute obstruction had occurred. I know from my own experience that each year I see more cases where the diagnosis is made or suspected in time to prevent the onset of acute symptoms.

The results of operations for obstructive lesions of the colon twenty years ago were very bad. The mortality was high and the recoveries were for the most part accompanied by a permanent faecal fistula of some kind. As the result mainly of improved diagnosis all this has been changed, and there are now few serious conditions which show better results from skilled surgery.

The fact that the surgeon is now able to operate upon lesions of the colon before the onset of obstruction has entirely altered the type of operation performed for this condition, and with proper precautions and careful technique it is now possible to resect that portion of the colon containing the lesion and to join the bowel up by axial union in one operation with very little risk—a procedure which was almost unheard of twenty years ago, when Paul's two-stage method, Senn's plates, Robson's bobbin, or Murphy's button were in use.

I do not propose to describe in detail the symptoms of obstructive lesions of the colon, but only to say that in my experience the most important early symptom is repeated irregularity of the bowel actions without adequate cause, more particularly repeated attacks of slight diarrhoea alternating with constipation and vague abdominal discomfort. We have a number of methods to help us in making a diagnosis, but it is as well to own that none of them are very reliable. The presence of occult blood in the stools on microscopical examination is valuable in cases of cancer, but cannot be relied upon, and is of no negative value.

X-ray examinations after a barium enema are very useful, but must be very well done with a first-rate apparatus having a very short exposure so as to eliminate movement of the bowel and ensure a sharp edge to the shadows. Also the examination must be repeated to avoid as far as possible accidental appearances. The appearances of a well marked filling defect in one part of the colon if the examination is repeated some days later affords valuable evidence, more particularly if belladonna has been administered to eliminate spasm. It is not, however, entirely reliable, and the absence of a filling defect will not exclude a lesion. Lesions due to diverticulitis can now be diagnosed with considerable accuracy by the *x* rays and a barium enema, but very good photographs are necessary.

A sigmoidoscopic examination is very useful, and such evidence as it affords is reliable. It does not, of course, enable a growth above the middle of the pelvic colon to be seen, but it at least has this advantage—that the absence of a lesion up to this level tells the surgeon that any lesion present will be sufficiently high up to allow of resection from the abdomen, or short-circuiting by lateral anastomosis, and that colostomy can be avoided.

Too often it happens that with all our efforts we cannot arrive at an exact diagnosis, although there remains a grave suspicion that a lesion in the colon is present. In such circumstances we should not hesitate to back our opinion and advise an exploratory laparotomy. The "wait and see" policy generally results in disaster. The risks of exploratory laparotomy are very slight, while the danger of leaving a carcinoma of the colon is very grave, more especially as the results of partial colectomy for cancer of the colon are better at an early stage than those for removal of cancer in any other part of the body. Restoration of function is usually perfect and the tendency to recurrence after removal of a cancer in the colon is very slight compared with cancer elsewhere.

The majority of obstructive lesions in the colon are the result of cancer, but there are a number of other conditions which also cause such symptoms. One, which of recent years has come into considerable prominence, not because it is rare, but because it had not hitherto been recognized, is diverticulitis. This curious condition causes a tumour very similar to a malignant growth and partial obstruction of the bowel lumen, often quite suddenly, as the result of acute inflammation in, or around, the diverticula. The distinction between diverticulitis and cancer is not always easy, but the facts that the former is accompanied by signs of inflammation, while the latter is not, and that bleeding is rare in cases of diverticulitis, while it is the rule in cases of cancer, help considerably in forming a diagnosis. An *x*-ray examination after a barium enema will generally give well marked evidence of diverticulitis; but, of course, the presence of diverticula in the bowel does not necessarily exclude the presence of a growth also, as the two conditions are often associated.

Of recent years it has proved possible to resect completely a portion of the large bowel badly damaged by diverticulitis and restore the bowel by axial union.

Hyperplastic tubercle is a rare disease which gives rise to stricture and tumour in the colon and closely simulates diverticulitis. It can be completely cured by resection of the affected portion of the bowel. Bands and adhesions are, of course, frequently met with, involving the colon and causing obstructive symptoms. They are difficult to diagnose, but very easy to treat once they are detected.

Chronic volvulus is a rare condition, which is occasionally diagnosed as the result of an *x*-ray examination. Quite recently I was able to make this diagnosis in a middle-aged lady who had repeated attacks of obstruction, which came on quite suddenly with great pain and distension. The attacks had gone on for a number of years, but were getting more severe and less easily amenable to treatment. At operation a very large volvulus of the sigmoid was found, which was exactly as seen in the *x*-ray photographs; I resected the whole loop and performed an end-to-end junction with complete success.

The patients suffering from obstructive lesions of the colon are usually elderly, and this adds an element of risk. Fortunately with proper care we are now able to operate on quite elderly people with little more risk than would be the case with younger patients, providing certain precautions are taken, but these precautions must be very carefully observed.

I attach great importance to very careful preparation of the patient. At least a week should be devoted to this.

*A paper read before the Nottingham Medico-Chirurgical Society, March, 1927.

The bowels should be well cleared (with castor oil for preference), and then kept moving easily with petroleum and drachm doses of castor oil. On no account should the patient be operated upon till several days have elapsed after the necessary preparation, and those days should be spent in bed so as to rest the heart and allow the patient to build up a reserve of energy. This preparatory treatment often causes the patient annoyance, as he fails to see the necessity for it; but I am convinced of its advantages. Small doses of strychnine during the week prior to operation are also helpful. Some form of intestinal antiseptic should also be given; of these I favour kerol and Bulgarian lactic acid bacilli to modify the intestinal flora. The hygiene of the mouth should be attended to, and the patient given plenty of water to ensure that the tissues are well washed out and the blood volume good; a dehydrated patient is always a dangerous one to operate upon. In cases of exceptional risk a blood transfusion should be performed some days before operation.

The anaesthetic is of considerable importance, and ether and chloroform as a rule should be avoided as far as possible. I favour a combination of twilight sleep and local or spinal anaesthesia, or gas and oxygen and local anaesthesia. This greatly reduces the risks, as it enables us to avoid making the patient sick or ill, and does not interfere with his nutrition by causing dyspepsia and loss of appetite.

The incision, of course, depends on the situation of the lesion, but when this is known approximately I always prefer a diagonal incision, which gives free access to the colon. It is also the most convenient for local anaesthesia, as it does not involve more than one nerve in the main incision, and this can be readily blocked. It is easily closed, and does not, in my experience, result in hernia. I have used this incision for many years, and consider it vastly superior to any other. It affords the best and easiest access to the parts, and enables the surgeon to work with the minimum of disturbance of the abdominal cavity.

If the lesion, as is usually the case, is on the left side, the patient should be rolled over slightly to the opposite side, with sandbags under the hip and shoulder and a large pillow under the knees. In this position the colon comes easily into the wound and the small bowel falls away and does not interfere with the operator. Should it be necessary to resect the splenic angle, easy access to this part of the colon will be secured by prolonging the incision backwards towards the last rib.

When the bowel can be drawn out of the wound I prefer to make an open resection with the ends of the bowel and mucous membrane exposed, merely controlling the contents with rubber clamps. The ends are sewn together under the surgeon's eye, and it is possible to be sure that a proper blood supply is left at both ends. One of the chief reasons why axial union of the large gut has been considered unsafe is because surgeons have not realized the importance of ensuring a good blood supply to both ends of the bowel. The blood vessels of the large gut are parallel with each other and anastomose comparatively little; as a result, if the bowel is cut directly across, the stitches joining the ends on the mesenteric side are liable to constrict the blood vessels feeding the junction on the side opposite the mesentery, and most of the disasters that have occurred after axial union of the colon, and were often attributed to faulty stitching, have really been due to sloughing from an inadequate blood supply. As I pointed out many years ago, this difficulty can easily be got over by dividing the bowel at an angle of 45 degrees instead of at right angles. This has the advantage of ensuring a good blood supply to the whole of the joined edges, and also compensating for any narrowing of the lumen caused by the stitching. I put in a couple of guide stitches at either side of the bowel ends, and then sew straight across from one side to the other on the mesenteric side, the stitch being continued right round until it reaches the point where it commenced. A second, peritoneal stitch is then inserted, which also closes the gap in the mesentery on the inner side, a slight gap being left on the outer side of the mesentery to drain the mesentery itself and prevent the formation of a haematoma here which might interfere with the blood supply of the bowel ends. A cuff of omentum is then sewn over the junction with two or three stitches, a fold of omentum being pulled down for the purpose, or a piece of the omentum cut off as a free graft. The advantages of this procedure are that it protects the line of junction and prevents small gut getting stuck to it during the process of healing. Before I made a practice of this I had one or two cases where the abdomen had to be reopened for intestinal obstruction, and I found a small angle of gut adhering to the junction in the colon. A small rubber cigarette drain is left down to the site of junction and the wound closed in layers. Finally—and to this procedure I attach great importance, as I consider it one of the chief means of reducing the risks of partial colectomy—I insert a tube into the caecum so as to form a temporary tube caecostomy. The tube is left projecting from the wound on the right side and connected by a soft rubber tube to a bottle or bucket beneath the bed. The advantage of the temporary caecostomy is that it allows the bowels to act and prevents any strain being thrown upon the new junction; it also prevents distension of the colon and allows the bowel to be washed out if necessary. On the ninth day the tube becomes loose and the temporary caecostomy either closes immediately or in the course of the next day or two without any further attention. It has none of the objections of an ordinary caecostomy—there is no mess, and it closes automatically. I always drain the caecum in any operation involving the removal of part of the colon, the only exception being in removal of the caecal angle, where, owing to the liquid contents of the bowel, it is not always necessary.

Closed Methods of Axial Union.

Several different operations have been described for joining the colon axially without exposing the mucous membrane. There are those of Martel, of Kocher, and of Murphy. The principle is the same in all. The bowel is divided between clamps, and then the two ends are sewn together over the clamps with a stitch, which takes up the serous and muscular coats, the clamps being withdrawn before tying the last stitch. At no stage in the operation is the lumen of the bowel exposed, and it is, therefore, easy to keep the site of operation clean. The advantages of this method are more apparent than real. It seems fairly certain that the juice squeezed out by the clamps on crushing the bowel must contain micro-organisms. Another serious disadvantage is that one is relying entirely upon the crushed edges of bowel to prevent haemorrhage. The blood vessels lie in the submucous layer and are not controlled by the stitches, and we know that crushing is not a very satisfactory form of haemostasis. I personally prefer to make sure that my stitch has controlled all bleeding points.

Colectomy in Special Situations.

The Caecal Angle.—This part of the large bowel is particularly suitable for colectomy. The blood supply is good, and the whole caecal angle can be easily stripped up towards the mid-line so as to get mobilization. It is better to make a fairly extensive rather than a limited resection in this position. I prefer to remove the entire angle, close the hepatic end of the transverse colon, and implant the small gut into the side of the colon. This tends to reproduce the original condition and to form an artificial ileo-caecal valve. Where it is possible the ileo-caecal valve itself should be preserved, but this is very seldom possible, as a common situation for growths is quite close to the valve. Owing to the liquid character of the contents of the bowel in this situation temporary drainage of the bowel is not necessary. The results are usually very good, and it is the easiest part of the colon to resect.

The Transverse Colon.—The chief difficulty here is in separating the growth from the stomach; it may even occasionally involve a partial resection of the stomach. The omentum is separated on either side and then stitched over the junction at the termination of the operation; but it is advisable to leave a gap in the omentum for drainage, or secondary abscess may occur behind the bowel in the lesser sac. Colectomy in this situation is generally fairly easy.

The Splenic Angle.—The diagonal incision already described is very useful here, as it gives excellent exposure of the angle and allows the colon to be easily freed. It is very necessary to free the colon thoroughly to get the ends to come comfortably together. Care has to be taken in freeing the angle itself not to damage the lower part of the spleen, which is in very close contact, or the kidney and pancreas, which are close behind it. Some of the best results I have seen have been in cases of resection of the splenic angle. I removed a carcinoma of the splenic angle in a jockey eleven years ago, and this year he won one of the classical races.

The Pelvic Colon.—This is the commonest situation, and more than half the cases of resection are included in this area of the colon. Much depends upon the part of the pelvic colon involved. If it is in the descending colon, or upper part of the pelvic colon, the resection should not be difficult. Greater difficulty, however, occurs when the lower part of the pelvic colon is involved. In all cases the outer layer of the pelvic mesentery should be divided near its base for a considerable distance and the bowel carefully stripped up so as to free it well from the left iliac fossa. There are no vessels entering the mesentery at the outer aspect, so that free stripping is quite safe, and considerable mobilization of the colon can thus be obtained. The chief difficulty arises with cases of diverticulitis, as there are frequently dense adhesions to other structures, more particularly the bladder in males, and the uterus or left tube in females. It is very important to interfere as little as possible with adhesions in cases of diverticulitis, as serious sepsis may be lighted up. On the other hand, the condition is not malignant, and excision should be carried out when possible, even though parts of other organs have to be sacrificed. I have on several occasions removed the whole uterus and left tube and resected portions of the small gut in order to remove tumours due to diverticulitis. If the bladder is extensively involved excision is, of course, out of the question.

The Lower End of the Pelvic Colon.—For two reasons this is the most difficult situation. The first is that there is often not enough healthy bowel below the tumour to allow of a proper resection, or the bowel is so short that the resection has to take place within the abdominal cavity. The second, and more serious, difficulty is that the blood supply to the upper part of the rectum is liable to be gravely interfered with if a portion of the pelvic colon immediately above has to be removed. The surgeon may be faced with serious difficulty in deciding what he should do. One alternative is to make a complete abdomino-perineal excision, leaving a permanent colostomy of the upper end, and this may be the only procedure possible when the growth is low down in the pelvis, but still excisable. Another alternative is the tube method, which was described by me in 1908; the principle of this is that after removing the tumour a long rubber tube of large calibre is sewn into the upper end of the bowel, and then passed down through the rectum and out of the anus. The tube is then drawn on until the upper bowel is lightly invaginated into the upper end of the rectum and is secured there by a few stitches. This method gives very good results, but it is decidedly dangerous owing to the fact that the blood supply to the rectum cannot be relied upon. If this method has to be used the surgeon must be certain that he is not seriously damaging the blood supply to the rectum, which will depend entirely on the two lower sigmoid arteries. In view of this doubt good drainage should be provided from behind, and a temporary caecostomy or colostomy performed.

The results of colectomy are good both from the point of view of immediate risk and from that of restoration of function. The mortality from operation is about 16 per cent., but this is counting many of the older cases and can certainly be reduced much below this figure. The following table shows the mortality following colectomy (53 cases) and the condition for which the operation was performed.

	Cases.	Deaths.
Cancer	41	7
Diverticulitis	9	2
Chronic volvulus	3	0

There must always be some risk as the patients are not only old, but often in a bad state of health from partial obstruction and dyspepsia over long periods, which cannot be entirely compensated for by the preparatory treatment. Also colectomy carries with it a fairly high risk of post-operative infarct. The risks are not serious when we consider the grave nature of the lesions for which the operation is done.

It is now quite exceptional to have any faecal fistula after partial colectomy. As a rule the wound heals by first intention and the patient is up in under three weeks quite healed. The restoration of function is perfect, as the loss of a few inches of colon causes no inconvenience. When performed for cancer this operation gives the best results of all cancer operations, as there is no mutilation or limitation of normal function, and the tendency to subsequent recurrence is very low.

REFERENCE.

[1] BRITISH MEDICAL JOURNAL, 1927, i, 1.

Notes on JUVENILE RHEUMATISM:

BEING A COMPARISON OF THE REPORTS OF THE BRITISH MEDICAL ASSOCIATION AND THE MEDICAL RESEARCH COUNCIL.

BY

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IN July, 1926, there appeared the first report of the British Medical Association Committee of Inquiry into Rheumatic Heart Disease in Children.[1] It dealt with four important aspects of the problem of juvenile rheumatism, of which I am now chiefly concerned with two—namely, the "Environmental and other Predisposing Causes of Rheumatic Infection," and the "Effect of Tonsillectomy on Rheumatic Infection in Children."

In March, 1927, the Medical Research Council published a report[2] on "Social Conditions and Acute Rheumatism," one of a series of "Child Life Investigations." As the title implies, this dealt with some of the same questions as those parts of the B.M.A. Report already mentioned.

It is the purpose of this communication to examine these two reports where they overlap and to compare their results. This has not yet been attempted: the reports made no mention of each other, and indeed were drawn up by entirely different committees and based on investigations undertaken altogether separately from each other. Both sets of investigations were prolonged and widespread, consequently where agreement is found in the two reports there is a considerable weight of evidence in favour of the result reached.

In April, 1927, the B.M.A. Committee issued a second report,[3] with which I am not here directly concerned.

The chief points of contact between the two reports here to be considered are six in number. On four of them it may fairly be claimed that agreement is shown; these relate to the influence of (1) social status, (2) heredity, (3) school environment, and (4) tonsillar disease and tonsillectomy. In the remaining two questions, those of the influence of (5) contagion and (6) damp dwellings, agreement appears to be lacking.

1. *The Influence of Social Status.*

In this matter the B.M.A. Report made two points—namely, that rheumatic infection is far more common in the poorer classes than in the well-to-do; but that, on the other hand, the incidence of the disease was less in the lower than in the upper strata of the poorer classes. With both these views the M.R.C. Report agrees. On the first point Dr. G. F. Still gives valuable figures (p. 7):

"In the Children's Out-patient Department of King's College Hospital, where only children up to 10 years of age are treated, there were, amongst 1,000 consecutive cases, 229 children between 6 and 10 years old: out of these 229 cases, 13.1 per cent. showed

evidence of acute rheumatism (3.5 per cent. joint symptoms and the rest heart affection or chorea). In a private practice dealing almost exclusively with the well-to-do, there were, amongst 700 consecutive cases between the ages of 6 and 10 years, 5 cases of acute rheumatism (2 of joint affection, 2 of endocarditis, and 1 of chorea), so that less than 1 per cent. (0.7 per cent.) showed evidence of rheumatism."

On the second point, the lessened prevalence amongst the poorest children, the M.R.C. Report states (p. 95):

"if the hospital patients are divided into three classes according to the degree of poverty, the poorest of these three, the very poor and destitute, show a lower incidence of rheumatism than the other two."

It may therefore be held to be established that juvenile rheumatism is a disease of the poor, but not particularly of the poorest.

2. *The Influence of Heredity.*

The B.M.A. Report examined the evidence which had been recently published on this point and tended to the conclusion that the influence of heredity on the large-scale production of the disease was less potent than many had been inclined to think. On page 7 the following occurs:

"Figures such as these cannot be ignored, but it is difficult to know precisely what importance to lay upon the hereditary factor. In the first place, rheumatism is a very common disease, and it is concentrated in the families of the poorer classes; thus in any case it is bound to appear frequently in the families of rheumatic children. Again, if strictly environmental causes are of great importance, it must be remembered that in most instances they will operate alike on the family and the patient.

"The point at issue is this: Does the hereditary and family tendency swamp the environmental factors at work in producing the disease? Taken at their face value, the figures quoted above might suggest that this is so, but I doubt if they justify a conclusion more definite than that perhaps the hereditary influence aids and abets the environmental influence."

The M.R.C. Report, after sifting its evidence carefully, concludes (p. 95) that "no sufficient evidence of heredity was forthcoming."

It is satisfactory that there is found to be so close an agreement on this matter, which is clearly of great importance in the problem of the prevention of the infection.

3. *The Influence of School Environment.*

The B.M.A. Committee used the term "school environment" in a broad sense, meaning the circumstances of a child living at home and undergoing compulsory education at a day elementary school. It is in this sense that the term is used here. The opinion of the B.M.A. Committee was to the effect that in the production of rheumatism the influence of the child's home was greater than that of its school; but that, on the other hand, attendance at school had an important influence on increasing the severity of the infection in rheumatic children, thus favouring heart disease. The view of the Committee is, perhaps, best summarized in its *second* report (p. 122).

The M.R.C. Report brought forward novel and important evidence on this question by comparing the prevalence of rheumatic infection in day elementary schools with that in Poor Law institutions. The incidence of the disease in the latter was found to be almost abolished.

Four Poor Law institutions, in reality residential schools, were examined. In one the children lived in "barrack" schools housing a large number in each; in the others they lived in houses, or so-called "cottages," housing twelve to fifty children each, living under a "foster-mother." The total number of children in residence was over 1,800. They went out for their education, presumably like the boys of a large public school.

Thus it is seen that this comparison appears to throw the emphasis back again on to the "home" as opposed to the "school" itself, for this evidence points to the conclusion that children taken from the rheumatic stratum of society escaped the disease if transferred to a school which they attended from healthy "home" surroundings.

4. *The Influence of Tonsillar Disease and Tonsillectomy.*

Tonsillar Disease.—In common with the results of previous investigations both reports found a high incidence of diseased tonsils in rheumatic children. The figures reached in both reports were closely similar. The B.M.A. Report (p. 16) found diseased tonsils in 83 per cent. of cases in active stages, and in 73 per cent. of those seen in quiescent stages. The M.R.C. Report (p. 99) gave 75 per cent. as the proportion of rheumatic children showing unhealthy throats, as compared with 55 per cent. in non-rheumatic hospital children. It also made another interesting observation—namely, that in the Poor Law institutions in which the incidence of rheumatism was conspicuously low, the percentage of children showing unhealthy throats was down to 36.5. The agreement here is therefore particularly close.

Tonsillectomy.—The influence of the complete removal of diseased tonsils in rheumatic children was investigated by the B.M.A. Committee, and the conclusion reached (p. 4) was that their inquiry

"suggests that in the child whose tonsils have been completely removed a milder type of rheumatic infection in which the cardiac lesions are relatively light is likely to be seen."

This opinion was based on investigations detailed in Part III of the Report (pp. 16-20), where the attempt was made to establish three propositions: (1) that the clearest estimate of the value of tonsillectomy in juvenile rheumatism was to be obtained, not by a "follow-up" method, but by a study of active rheumatism in tonsillectomized children; (2) that, if this were done, it would be found that in such cases the rheumatism was of a type milder than the ordinary, the heart being conspicuously spared; (3) that the commonest manifestation of any severity in tonsillectomized cases was chorea, and that this tended to be "uncomplicated" by heart disease.

The M.R.C. Report did not directly address itself to the important question of the influence of tonsillectomy, but one set of the figures published in it was so strongly confirmatory of the conclusions referred to above that it must here be mentioned. The Report (p. 40) says:

"It is curious to note the preponderance of attack by chorea over other forms of rheumatic manifestation in those 60 cases whose tonsils had been removed. 66.7 per cent. of those who developed a first attack of rheumatism some time after removal of the tonsils had it in the form of chorea, and of these all but 4 had no other manifestation of the disease."

These figures are noteworthy as they represent the largest series yet published of cases of chorea in tonsillectomized children, and that 40 such cases can be quoted in which no fewer than 36 showed no other manifestation of the infection is an important observation. The comment made in the M.R.C. Report on these figures is merely that they "suggest that removal of the tonsils affords no protection against attack by chorea"; but surely the significant conclusion to be drawn from them is that of the modifying influence of the operation on the severity of the infection.

Thus on the two points of the preponderance of chorea and the comparative absence of carditis in the rheumatism of tonsillectomized children, the M.R.C. Report appears to offer important evidence confirming the conclusions of the first B.M.A. Report.

On the curious frequency of chorea as the manifestation of rheumatic infection in tonsillectomized children, Carey Coombs has recently written[4]:

"Now, chorea is the most easily excited of all the rheumatic phenomena. It takes a smaller dose of infection to upset the brain than it does to inflame the heart or joints, or to call into being a subcutaneous node. Chorea is more often met with as a solitary manifestation of rheumatic infection than any of the others."

Since this was written the figures quoted above have appeared in the M.R.C. Report. It may be hoped that they will help to oust juvenile rheumatism from its proud position of being the only relapsing or chronic infection closely associated with tonsillar disease in which it is thought desirable to retain unhealthy tonsils *in situ*.

5. *The Influence of Contagion.*

Passing to the first of the two subjects on which the two reports fail to confirm each other's results, the possible influence of contagion in spreading the disease has been most seriously considered in the M.R.C. Report. The subject is introduced thus (p. 8):

"The question of most practical importance is whether rheumatism is infectious, and, if so, whether it is carried by persons, by fomites, by dwellings, or in any other preventable way. . . . Most of the statistics and observations contained in this Report are directed especially to the solving of these problems. . . ."

Much space was given, in the Report itself and in three appendices, to the sifting of evidence on this point. The results obtained were summarized on page 98 as follows:

"On the whole, while it cannot be said that there is, in the facts collected, any conclusive evidence of contagion, many of them are consistent with this view."

There was contained in the Report much more argument on the matter than can be quoted here, and the general impression left on the reader's mind is that on the influence of contagion the verdict of the Report was one of "not proven" rather than "not guilty."

On the other hand, the B.M.A. first Report, although specially concerned with the question of the mass-production of the disease, made scant reference to the possibility of its spread by contagion. In the Preface, expressing the views of the Committee as a whole, such a possibility remained entirely unmentioned. In the section (Part I) devoted to the "Environmental and other Predisposing Causes of Rheumatic Infection," for which I was responsible, the only mention made of this matter was (p. 7):

"All the evidence points against the importance of this factor (direct contagion), although everyone has from time to time seen two cases arising synchronously or close together in a family. Probably we should liken rheumatism in this respect to pneumonia or appendicitis rather than to tuberculosis. . . ." (p. 9): "Direct infection from one case to another is of no practical importance."

Should the theory that infection from case to case plays any real part in the production of juvenile rheumatism on a large scale be accepted, the whole of our treatment of the disease will require alteration. It is therefore of great importance that we should not be persuaded to drift into agreement with such a conjecture. For this reason the following considerations which weigh against such a view are submitted here.

(*a*) We have already seen with what purpose the M.R.C. investigations were undertaken, and the negative character of the evidence elicited in the study of cases of rheumatism amongst the poor in their own homes. A further study of the few cases which arose in Poor Law institutions was made, with the result that "no evidence of 'infection' from one case to another could be found in any of the schools visited" (p. 84).

(*b*) The fact that although rheumatism is a disease of the children of the poor it is less common in the poorest than in the stratum above them, shows clearly that overcrowding is not a factor of prime importance in the production of the disease. This peculiar class incidence is admitted in the M.R.C. Report; its significance against the theory of contagion is hardly faced.

(*c*) In hospitals the disease is not seen to spread. This fact of universal experience is not mentioned in the M.R.C. Report, so far as I can ascertain.

(*d*) The theory of possible contagion is apparently attractive to those who are now beginning to study rheumatism from the standpoint of public health; it is important, therefore, to state candidly that there is no such tradition on the side of clinical medicine. The B.M.A. Committee which issued the first Report was composed entirely of hospital physicians experienced in the rheumatism of children, and they passed the possibility of contagion over as of no practical importance. In this they were at one with hundreds of other physicians up and down the country. Is it likely that for years they have been studying a disease which is really infectious and they did not know it? If it may be said without impropriety, the interest in the disease at St. Mary's Hospital has always been particularly keen, as becomes the school of Sibson, Broadbent, Cheadle, Lees, Poynton, Paine, Symes, Coombs, and others: we know nothing of its infectious nature there.

(*e*) There is one further point: that a theory of contagion is against all the modern bacteriological conception of the disease. The discussion of this in Part II of the B.M.A. Report is to the effect that the bacteriological problem has swung away from the difficulty of accepting a streptococcus as the causative micro-organism, to the difficulty of understanding how an apparently normal inhabitant of the digestive tract can take on such a definite pathogenic role. If this be so, the part played by contagion must be at most of the slightest importance, analogous, as has been quoted above, to such a possibility in pneumonia and appendicitis. It may seem unmannerly to suggest that in scientific matters there are such things as fashions, but to many of us specially interested in rheumatic problems the persistent reiteration that we know nothing of the causative agent of rheumatism, nor even if it be an infection at all, seems little other than a fashion and a fatigue. To write as though the researches of Poynton and Paine had taught us nothing and pointed nowhere, seems as inaccurate as to suggest that the present efforts being made against juvenile rheumatism are not in reality the outcome of Poynton's many years of pioneer work and teaching.

6. *The Influence of Damp Dwellings.*

The first B.M.A. Report expressed the opinion that living in damp houses predisposed children to the rheumatic infection, and regarded this as an important factor in causing so much of the disease in this country. As the evidence in favour of this view has been summarized in the Appendix to their second Report[3] it is not necessary to restate it here, except to say that the world distribution of rheumatism and its seasonal incidence in England make it almost impossible to conceive that cold and damp should be factors of no importance.

The M.R.C. Report, on the other hand, states (p. 96):

"The housing inquiry threw but little light on the problem; dampness which has generally been credited with playing a large part in the causation of rheumatism was only slightly more frequent in the houses of the rheumatic families than in those of the others."

The material investigated for the M.R.C. Report consisted of the following (p. 10):

	Rheumatic.	Controls.
Hospital for Sick Children, London	121 cases	None
Royal Hospital for Sick Children, Glasgow ...	200 ,,	100 cases
St. Thomas's Hospital, London	400 ,,	100 ,,

The results obtained in investigating the housing conditions of the rheumatic and "control" families were:

	Rheumatic.	Control Families.
Hospital for Sick Children, London (p. 73) ...	30.0% damp	—
Royal Hospital for Sick Children, Glasgow (p. 73)	33.5% ,,	23% damp
St. Thomas's Hospital, London (p. 75)	39.8% ,,	33% ,,

Of the differences in the proportions of damp houses in the two sets of controlled figures, the Glasgow figures were said to be "probably significant" (p. 73), and the St. Thomas's figures to be "not significant" (p. 75).

The B.M.A. investigators made no attempt to deal with the difficult subject of what can be properly taken as rheumatic "controls," and contented themselves with reporting the proportion of rheumatic children who were, when first attacked by the infection, living in damp houses. The M.R.C. Report, on the other hand, dealt with the housing conditions in 200 control families, as we have seen, and it thus becomes necessary to deal with the reliability of the "controls" used. The figures produced in the M.R.C. Report illustrating the influence of damp appear open to criticism on four grounds.

1. The "control *children*" were "selected at random except as regards age and freedom from suspicion of rheumatic disease" (p. 11). It may readily be accepted that such children were apparently suitable for use as controls, yet when it is found that no less than 55 per cent. of them had unhealthy tonsils (p. 99) we see that, even in such a seemingly simple test as this, we are in difficulties in the matter of the material for "control" observations. With such a proportion of diseased throats who can tell what number of the children would develop rheumatism? This probability shows one of the difficulties in attempting any accurate control observations.

2. But with the "control *families*" there is in the M.R.C. figures a large element of error, for the so-called "control families" are by no means "non-rheumatic families." They are defined as follows (p. 9):

> "These families were selected only in the respect that each contained a child attending the hospital for a non-rheumatic disease, and will be termed 'control families.'"

When the figures are examined it is found (Table 8, p. 16) that in the 200 "control families" there were 43 cases of rheumatism, apparently spread over (p. 18) at least 36 of the families. That these were not unimportant instances of previous rheumatism occurring in parents is shown by the following passage (p. 18):

> "The difference in the incidence of rheumatism among the brothers and sisters of the rheumatic and control children respectively is striking, the percentage of those with rheumatism in the rheumatic families in the data from St. Thomas's Hospital being almost three times greater than that of the control families. . . ."

In view of these facts it can only be said that the so-called "control families" are not acceptable as controls. Any influence which the housing factor may have on the production of rheumatism would be, in such comparisons, considerably diluted by the presence of rheumatic families in the "control families."

3. There is no evidence in the M.R.C. Report that the housing conditions examined were those in which the disease first declared itself in the children.

4. The proportion of damp homes is much lower in the M.R.C. figures than in those of the B.M.A. Report. This is probably due to the use of a different standard of "damp," and as there appears to be no generally accepted standard such differences in separate investigations will be bound to occur.

That the M.R.C. Report was unable to confirm the traditional association between rheumatic infection and damp houses is regrettable, but, considering the type of "controls" used and the stress laid on them, it is hardly surprising. Yet there is this to be said, that even with the controls used the figures concerning the influences of damp homes, proximity to water, low-lying sites, terrace houses as opposed to tenement houses were in every case in favour of damp being a factor, though showing only small differences in the rheumatic and in the "control" series. This is surely of significance, for were there nothing in the theory of damp, the figures would hardly be likely all to point one way.

Further, there is the new evidence, already quoted from the M.R.C. Report, on the absence of rheumatism in such children of the rheumatic stratum as are moved from their own homes and placed in Poor Law residential schools. This is of great significance, for what has happened to these children to prevent their developing rheumatism? It might be thought that by their removal they had escaped from poorer food and clothing, and greater overcrowding; but these do not produce rheumatism, for the disease is less common in the poorest of the poor than in the strata of poverty above them. Again, they might be spared the disease by escaping from contact with other cases; but rheumatism is not a contagious disease. What, then, has happened? What factor, big enough to account for such a great change, has been altered? Is there any other left as likely as the condition of the house?

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A REVIEW OF 1,000 CASES OF ASTHMA.

BY

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THESE cases were seen between May, 1922, and the end of 1926, subsequently to the 270 cases the statistics of which I published in conjunction with the late Dr. Latham.

An etiological classification is still quite impossible, but cases reviewed in large numbers do tend to group themselves into more or less clearly defined types, differentiated by the prominence of some symptom or causal factor. Any one case may fall into several of the following types:

1. The type sensitive to foreign proteins.
2. The non-sensitive type.
3. The type that has asthma with colds.
4. The type that has asthma with enlarged tonsils.
5. The type that has asthma with catarrh.
6. The type having also paroxysmal rhinitis.
7. The colloido-clasic type.
8. The periodic type.
9. The type caused by bronchitis.
10. The type that also has a high blood pressure.
11. The type that has eczema.
12. The Adam's week-end type.
13. The seasonal type.
14. The type that is identified with localities.
15. The type that has asthma from severe shocks.
16. The occupational type.
17. The type sensitive to aspirin.

Type 1.—Many cases of asthma and similar complaints are due to an anaphylaxis comparable to the experimental anaphylaxis in animals. I am more than ever convinced of the value of the dermal reactions, and I have treated many patients successfully by this method. Reactions to wheat, milk, egg, dog hair, and cat hair have each led to many cases being freed from asthma without any other treatment than that based on these observations. A patient who had had asthma continuously for thirty-five years has now been entirely free for three years, after giving up his feather bed and pillows as a result of a small plus one reaction to feathers.

Statistics of Sensitization in 1,000 Cases of Asthma.

Age of Onset.	No. of Cases.	Percentage.	No. Sensitive.	Percentage.	Horse.	Cat.	Dog.	Other Animals.	Feathers.	Foods.	Pollen.
0–5	298	29.8	238	80	120	89	64	44	151	114	63
5–10	113	11.3	96	88	44	39	16	17	57	35	28
10–15	64	6.4	44	68	18	13	14	14	28	27	15
15–20	61	6.1	37	61	18	13	10	5	22	14	15
20–25	70	7.0	34	48	7	9	7	8	20	17	9
25–30	81	8.1	48	60	14	14	5	8	39	11	11
30–35	77	7.7	31	40	8	6	8	5	19	12	8
35–40	64	6.4	29	45	5	4	6	4	22	13	6
40–45	53	5.3	15	28	2	5	4	2	11	5	—
45–50	40	4.0	9	24	2	1	—	1	4	2	1
50–55	35	3.5	4	11	—	—	—	—	3	3	—
55–60	24	2.4	3	12	—	—	1	1	1	—	—
Over 60	20	2.0	1	5	—	—	—	—	1	—	—

The chief points to be noted in this table are these. Asthma commences far more commonly in babyhood and early childhood than at any other time, and the great majority of such cases belong to the sensitive type. The incidence falls steadily with increasing years, except for a small rise between the years of 25 and 30. At this age lack of exercise and frequent colds may force an incipient asthma to show itself.

The average duration of asthma in these 1,000 patients was fourteen years. I saw 539 males and 461 females; 52 per cent. of them gave a history of asthma or hay fever in their near relatives.

Beyond the fact that I am now obtaining more reactions (58 per cent.) than formerly, the figures show very little change from previous statistics. The increase in the number of cases found to be sensitive is due to the much larger range of proteins I now use for testing—some 180 in all. I use six different kinds of feathers—hen, goose, duck, pigeon, canary, and parrot—where formerly I had only one. The specificity of the reaction is so well marked that patients may react to one of these and not to

others. Face powders, silk, linseed, and other causes of sensitization turn up from time to time.

A particularly interesting protein is that of house dust; patients often give a reaction to the dust from their houses and to nothing else. American observers and van Leeuwen have also noted this. On one occasion I found I was obtaining an unusually large number of reactions to flour. Patients would react to it when they would not do so to anything else. In comparison with this we may note that van Leeuwen finds in Holland many cases of asthma due to the habit they have there of keeping flour and grain in the house and to its becoming infected with mites and moulds. I have added this infected wheat and the house dust to my routine tests. I have noted that patients in whose sputa moulds are detected suffer from a particularly pernicious type of asthma.

Having discovered proteins to which the patient is sensitive, three methods of treatment are available.

(*a*) *The avoidance of the protein.* The only proteins which it is difficult to remove from the patient's surroundings are the pollens, horse hair, house dust, and the proteins amongst which he works.

(*b*) *Specific desensitization.* Provided the correct dosage is arrived at by the dermal reactions using dilutions of the protein great success often follows this method.

(*c*) *The non-specific method of desensitization.* In certain cases peptone given intravenously is very valuable, in others I prefer the Danysz or mixed coliform vaccine, after which a particularly permanent cure may result. Autohaemotherapy and collosol manganese, either separately or together, have cured many cases.

Many patients are benefited by small doses of vaccine and made much worse with large doses. If a dose grossly upsets a patient, especially if it gives him an attack of asthma, a dose ten times smaller should be tried.

With perhaps half a dozen exceptions every one of this series of 1,000 cases of asthma has been tested to all those proteins which may be causing the asthma. Removal of those proteins to which the patient is sensitive cannot always be expected to be successful, because the patient may be sensitive to the other proteins or have asthma also from other causes which are not so easily discovered.

A young lady sensitive to wheat grew progressively worse instead of better after giving up wheat, until I found that she was also sensitive to compound extract of liquorice, which was contained in a prescription I had given her.

Type 2.—Clinically many of these patients are exactly like those of the sensitive type, to which they will be transferred as fresh causes of sensitization are discovered.

Type 3.—These patients are often sensitive to feathers.

Type 4.—These patients have asthma at school, at home, and away on holiday, periodically, perhaps once a fortnight. Very often nothing will cure them but complete enucleation of the tonsils. More rarely the nidus of infection is to be found in a nasal sinus, an appendix, or even a single tooth abscess. One woman lost this type of asthma after the removal of an unhealthy uterus.

Types 5, 6, and 7 will be dealt with in some future article.

Type 8.—Patients of the periodic type suffer from four or five tremendous waves of asthma each year. The attack may take a month reaching its height and the same in going again. After a month of freedom the whole thing occurs over again.

Type 9.—These patients bring up some sputum every day. A patch of bronchitis is often found in the lungs. An autogenous vaccine from the sputum is often entirely successful in curing this somewhat rare type.

Type 10.—The only symptom peculiar to this type is that the patients have a high blood pressure, usually round 200. Apart from that we find them distributed here and there throughout all the other types, and the asthma should be treated quite independently of this symptom.

Type 11.—Of the whole series of 1,000, 22 per cent. had eczema in early life; 30 per cent. of the sensitive type had had eczema and 34 per cent. of those sensitive to foods.

Type 12.—Asthma in this type is due to an intake of too much food, especially the last thing at night, and insufficient exercise. Though the patient has asthma from other causes, a strict diet will do much to help the majority of cases. This type is very fully described by Dr. James Adam of Glasgow in his books. I have many patients who keep entirely free by following his régime of starvation and exercise.

Type 13.—Typical of this is, of course, hay asthma. But I also find a number of patients who have pronounced asthma strictly limited to the months of August and September. Christmas is often a bad time; so many unusual proteins are met at that season. Recently I had a patient sensitive to holly.

Type 14.—A large number of patients are worse at the seaside, on clay soil, or in woods, especially if damp, or when in houses surrounded by trees.

Types 15, 16, and 17.—I hope to discuss these in a future article. Type 17 is quite the worst that I see. Naturally these patients never touch aspirin, but their asthma is almost continuous. They nearly all suffer from nasal polypi, a rare thing in ordinary asthmatics.

Results of Treatment.

In order to obtain statistics on the subject, 300 patients were written to. These had been seen by me between September, 1925, and December, 1926, and included every single case of asthma seen during that time. The answers received denoted the condition of the patient's health during the one to two years since coming to me. Replies were received from 223; of the rest two had died, both from strokes, and 14 could not be traced; the remainder have not answered. Many of the latter, to my knowledge, are abroad, and there is no reason to suppose the results obtained in these would be less favourable than from those who answered.

Replies received from 223 Cases.

(*a*)	"No better"	44
(*b*)	"A little better"	31
(*c*)	"Better"	32
(*d*)	"Much better"	17
(*e*)	"Very much better indeed"	34
(*f*)	"Practically free"; "Occasional attacks from overfeeding"; or "Perfectly well"...	65
		223

Taking those patients in (*e*) and (*f*) their average age was 27 and the duration of their asthma thirteen years. The average age of (*b*), (*c*), and (*d*) was 37 years, with a duration of asthma for fifteen years. Those "no better" (*a*) were 40 years of age and had had asthma for seventeen years on the average.

In conclusion, and considering that these 300 cases written to were in series and not picked cases, and that by far the larger majority were only seen once, I think the results obtained are sufficient to prove that these new methods of treating asthma have more than justified their trial.

CONVULSIONS OCCURRING DURING SURGICAL ANAESTHESIA.

BY

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THAT patients completely under the influence of a general narcotic, both children and adults, should develop general convulsions, and die of them, is extraordinary, but several instances have come to my notice. I have been an anaesthetist for nine years, and have made over 11,000 administrations. The first case occurred only two and a half years ago; I have been able to cut short the last few. The seizure is epileptiform, comes on at any time during the progress of the operation, and may continue until the end and after. It may quite cease, but start again later on, perhaps after the patient has reached the ward (without, however, having regained consciousness). In other cases, after some time, it stops of its own accord, or in response to treatment.

It begins with twitching of the eyelids, or arms, or about the mouth, and extends rapidly all over the body, suddenly almost; but before this, I think, some jerkiness

of the breathing can be detected, inspiration is cut into two, and later on is so interfered with by spasms that ventilation becomes quite inefficient, and it may be difficult or impossible to keep a good colour even with oxygen. The convulsion is unremitting and severe, though there is not gross or violent movement, and it is obvious that it will quickly wear out the heart, even apart from the increasing respiratory insufficiency.

All the instances have occurred under ether, and nearly all in young people who have had an acute infection with more or less pyrexia. There have been fifteen in all, of which I will describe two or three typical ones.

The third case was perhaps the most singular of all, because when I saw the patient last he seemed on the way to a normal recovery from the anaesthesia, yet four hours later he was dead.

This was a boy, aged 7, with a gangrenous appendix, operated on at 6 p.m. in October, 1925, in hospital. From my own notes at the time: "Respiration very difficult owing to breath-holding in going under. Got generalized convulsions later on; these lasted till end of operation, but soon after stopped. Three hours later (in the ward) started again (after I had left the hospital). Artificial respiration; good colour; not round; respiration failed." Here I was impressed that the laboured breathing was the chief cause of the convulsions, the various muscle movements accessory to respiration overflowing apparently into the rest of the limb, face, and trunk muscles. There was no general peritonitis, and the boy was in good condition, but with some elevation of temperature; before he died, however, it went up to 107° F. The bomb method was here, as usually, employed. At the *post-mortem* examination there was nothing found that afforded any good explanation, and the coroner's verdict was in accordance with the medical evidence—that the fatal issue was due to some unknown effect of the ether.

It is most extraordinary that when I saw him, half an hour after the end of the operation, he should look perfectly well, though still unconscious, his colour, pulse, and breathing good, and so tranquil after the storm that there seemed not the least cause for anxiety.

The fifth case was at the same hospital, and the same method was employed. The date of the event and of my notes is April 13th, 1926.

"Strong healthy woman of 25; went under quite well; full blooded and rather muscular. Operation for removal of 'tarry' cyst difficult; moderate Trendelenburg position. Respiration full, unobstructed, good colour, and oxygen all the time. Suddenly, without the least warning, general convulsions—very severe; continued forty minutes. Anaesthetic stopped immediately, artificial respiration to regain regular breathing—no good; pressure of carotids seemed to give a few seconds quiet. Began to get bluish, and pulse not so good; also temperature rose to 101.8°, and then to 103°. Very little sign of recovery from anaesthesia. Suddenly became quiet when mouth was gagged open preparatory to passing an intratracheal tube and insufflating with air, which was therefore not done. Hewitt's airway tube has been in all the time. Respiration still rather jerky. In ward, pulse quite good, looking very slightly blue, breathing quiet, all right afterwards."

In this case there was no infection or toxaemia, the woman was in perfect general health, and the only exceptionable features were the Trendelenburg position, and that the breathing was full. Immediate discontinuance of the drug did not, at any rate during forty minutes, relieve the spasms. But I will return to this matter. I then began to be haunted by the affection, for on two consecutive days in June of 1926 I had a patient develop it.

The eighth case was a girl, aged 19, in hospital with a temperature raised to 102.5° F. by an acute pyosalpinx, who became convulsed under deep narcosis. But I seem now to know what to do. The notes are:

"All right on ether (bomb) till stitching up peritoneum, deep now, sudden onset of general convulsions. Immediately stopped anaesthetic. Lasted (severe) until three or four minutes after bandaging, when I noticed blueness due to oxygen being discontinued. However, convulsions soon stopped, and colour became good again. N.B.—No trouble except some struggling during induction; respiration quiet, nice, but when deep at end was shallow, regular, but jerky. Temperature 101.2° F.; in bed immediately afterwards."

Of the eleventh case I have notes kindly written out for me by the administrator, Mr. R. L. Holt, when in residence.

W. B., aged 21, admitted September 15th, 1926, with acute appendicitis spreading peritonitis, and a high temperature (103.2° F.); 1/60 grain atropine given shortly before operation (which all the previous cases, too, had in doses suitable to their ages). Ethyl chloride and ether induction; cyanosis observed soon after, but improved with oxygen, the airway being quite free. Though fully anaesthetized, spasm, followed by twitching of the eyelids, and then general convulsions, came on, and a good colour could not be kept. By the time the operation had been speedily concluded, the convulsions, though less severe, had brought him to the point of death. Stimulants, artificial respiration, and cardiac massage were alike unavailing, and he expired while still in the theatre. *Post mortem* there was found a distinctly enlarged thymus.

All but four of these cases occurred in my own practice, and in all these ether was given by the "bomb" method. In the last six of them the convulsions, in response to my treatment, lasted only a few minutes, or did not become general. The onset is definitely recognizable and easily to be distinguished from "ether clonus," which is of a coarser and at the same time a more rhythmical form. Notes were made of them the same day in all except two.

It appears from these cases that the convulsions are similar and typical. Five of them ended fatally, and in the first and fourteenth the patients were already in an extremely grave state before operation; in most cases there was pronounced infection, but in some, particularly the fifth (quoted here), this was not so.

All but one, the first, were in young people and children. All had ether, most of them nothing else, so that this appears so far as a causal factor, but no particular brand, as several kinds had been given. No history of epilepsy, convulsions, or chorea was at any time obtained.

Why is it that it is only recently that these things have been observed—only recently that they have happened, since they scarcely could have escaped notice?

Two matters suggest themselves in explanation—the gradually increasing use, especially by beginners, of ether, and the adoption, as a consequence, of many coverings over the frame and face to concentrate the vapour. Neither of these is very convincing, as little or no change in either direction, that I am sensible of, has taken place in my own routine during the past two or three years.

It is to be seen that in most cases the breathing is first affected: it becomes jerky, insufficient, or stertorous, or there is cyanosis, and in some, from the beginning, has been difficult, laboured, or uncomfortably deep and full. In my own cases I have not been satisfied in every one that the breathing could in any way be taken exception to; but in most I have, and always I have felt that it would not be unreasonable to blame an invisible increase of CO_2; for its effects, in the way of deep and energetic breathing, have, as I say, been obvious enough. Even without this it is fair to think that instead of resulting in steady and deep inspirations and in perfectly co-ordinated action of important muscles, it may produce only partly co-ordinated and jerky efforts, which can easily be supposed to extend to the whole body in conditions where, for some reason or another, there may be abnormal irritability of other muscles—such conditions, I mean, as pyrexia, toxaemia, and other narcosis. Quiet respiration is regular enough—in fact, when breathing is quiet, it is the more regular—but under general anaesthesia it is frequently but a short step from the accustomed rhythm to various irregularities, both of a rhythmical and an arrhythmical sort; so that I have come to regard the convulsion as largely the outcome of the extensive action of the CO_2 in patients who are sensitive to this naturally, or by reason of toxaemia, pyrexia, and so on, and who are under the influence of ether, a substance itself having a marked effect on breathing.

I have on occasion seen persons inhaling ether take breaths constantly increasing in depth, vigour, and rate, until in a few moments the whole frame is in tonic spasm, where they remain for some moments quite unable to move or breathe at all. Moreover, those so-called "athetotic" movements come particularly to those patients who, by reason of rigidity during the struggling stage, have difficulty, often lasting some minutes, in drawing their breath—being, as it seems to me, overflow movements of muscles other than accessory muscles of respiration, and lasting in a disorderly manner for an unexpectedly long time. Such cases throw light on the subject of this report, and however it may be, treatment based on this assumption has so far been successful. It is directed to the riddance of excess CO_2, and must be prompt. Luckily some moments' warning is given of the impending seizure

by twitching of the eyelids and mouth, jerkiness of the breathing, especially inspiration, or some strange movement or sound, and so the essential thing can be accomplished—the immediate removal of all coverings from the face before the convulsions have set in. Frame, towels, everything, are taken right away, and the air of the room given free access; any obstruction must be completely relieved, and a gentle stream of oxygen allowed to flow towards the mouth. In this way the CO_2 will diminish as much as possible by natural means. Recovery from the anaesthetic, so delayed in most of these cases, is permitted to proceed, until it is utterly impossible to have the patient come round any more, when pure chloroform may be given in small quantities and by a quite open method, though, indeed, this will often not be needed. The success of this procedure depends on the promptitude with which the onset of spasms is foreseen.

A field for investigation is here; but the most important thing for the time being is that as many as possible should know how to recognize the condition and treat it.

THE APPENDIX REFLEX.*

BY

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THE appendix reflex, giving rise to pyloric spasm, followed by hyperacidity and symptoms suggestive of gastric or duodenal ulcer, is now well recognized.

The object of this paper is to suggest that in certain subjects, with unstable nervous system, a diseased appendix may be the exciting cause of symptoms of an entirely different character. I propose to illustrate this suggestion by reference to a series of cases which have come under my observation, in most of which the possibility of an appendical origin had never been suspected.

CASE I.—*Migraine.*

In 1912 a country farmer, aged 45, was sent to me with a view to operation on his stomach, owing to repeated attacks of vomiting.

His history appeared to be a typical one of migraine. As long as he could remember he had suffered from violent headaches, associated with the appearance of spots before his eyes and followed by severe vomiting. At first the attacks occurred only two or three times a year, then once a month. When I saw him they came once a fortnight. He wakened with them, and was completely prostrated for a whole day, and unfit to work on the following day. He had no history of abdominal pain at any time. The stomach appeared normal. I regarded the case as one of migraine, and said I could not give any guarantee of relief by operation. We might possibly find a chronic appendix, but operation would be largely exploratory.

I saw no more of him for four years. He came back stating that his attacks had become intolerable. They now lasted four days. He was five days in bed. He had to sell his farm as he was quite incapable of looking after it. He asked me to "open him up" and see if anything could be done.

At operation, which was carried out through a right paramedial incision, admitting of a thorough examination of the whole abdomen, we could find nothing abnormal except a very large, chronically inflamed and distended appendix, dipping into the pelvis and adherent there.

He made an uneventful recovery. He had no recurrence of headache for a month after operation. When I last heard of him, a year later, he still had occasional headaches, but they never lasted more than a day, and he was again farming.

I have no doubt whatever that if this man had had the appendix removed in early life the attacks of migraine would have disappeared completely.

CASE II.—*Migraine.*

Shortly after operating on Case I, in 1916, a school teacher, a lady aged 40, came to me complaining of steadily increasing migraine. Her attacks, which at first had been monthly, had now become weekly. They were very severe, and unfitted her for her duty for two days at a time.

All the usual investigations had been made. The eyes had been thoroughly tested, and reading glasses supplied, without relief. The uterus was normal in size and position, functions regular. Urine normal in every respect.

In view of the previous case I suggested the possibility of relief by operation, at the same time explaining that no guarantee could be given. She at once agreed, saying she could carry on no longer as she was.

At operation we found (1) a well marked chronic appendix, adherent to the caecum; (2) a cholesterine gall stone, the size of a small pea, in an apparently healthy gall bladder.

The appendix and the gall stone were removed, and the gall bladder drained. She made an uneventful recovery.

Even after the operation, with knowledge of the pathological condition, we could elicit no history suggestive of either appendix or gall-bladder trouble.

I had a letter from her a year later informing me that she had now only a very occasional headache, which never interfered with her work.

CASE III.—*Migraine, with Glycosuria.*

In January, 1919, I operated on a young medical man, whose own account of his case speaks for itself.

"For several years previous to the onset of glycosuria (1917) I had periodic attacks of severe headache, associated with indigestion and loss of appetite, but no vomiting. The attacks lasted from two to four days, and were always in the frontal region, on one side or other, but never both sides together. The most tender spot was the exit of the supratrochlear nerve from the orbit. At times I could not use my eyes for the pain.

"The attacks continued till you operated on me in January, 1919. I think you found a chronic retrocaecal appendix, which you removed. This was associated with some cholecystitis, so you drained the gall bladder for a few days.

"Since that time I have been practically free from headache. I am also quite free from glycosuria, and am on an ordinary carbohydrate diet."

CASE IV.—*Cyclical Vomiting: Acidosis.*

Early in 1920 I saw, with one of our leading medical men, a little girl, aged 10. Since she was 2 years old she had suffered from attacks of acidosis with violent vomiting, occurring every two or three months, as the result of which she was confined to bed for some days, but was always relieved by large doses of alkalis. She never had any definite abdominal pain till the attack in which I had seen her. She then had definite symptoms of appendicitis. Immediate operation was advised, but it was with considerable difficulty that her parents could be persuaded to have this done. They said she was terribly nervous, and the very idea of operation would put her out of her mind. However, they finally consented.

At operation we removed a distended, congested appendix. Recovery was uneventful. Her attacks of vomiting and acidosis disappeared completely. Her nerves quieted down. In a short time she became a normal child and has remained so ever since.

CASE V.—*Cyclical Vomiting: Acidosis.*

On January 1st, 1923, I saw a little girl, aged 6. She was quite well till 2½ years of age. She then began to have severe "bilious attacks" once a month or oftener. The attacks increased in frequency and severity until 1923, when I saw her. They commenced with sneezing, running of the nose, then cough, lasting for a day, next day violent and persistent vomiting, which lasted twelve hours and completely prostrated her, leaving her greatly exhausted all the following day. She had some acidosis with each attack, but no headache. She never had any abdominal pain, except some muscular pain *after* the vomiting.

A finger in the rectum elicited some tenderness high up when pressure was made with the other hand in the right iliac fossa—that is, a bimanual examination of the ileo-caecal region, which is so useful in children. Otherwise nothing could be made out.

She was referred to a specialist for a thorough examination of the nose and nasal pharynx. He reported that there was nothing to account for her attacks. We accordingly operated, and removed a long, distended, corkscrew-like appendix. A month later she had one of her old attacks, then another slight one, after which they completely ceased. Her doctor reported on January 20th, 1925, that she had remained perfectly well ever since.

Osler says: "In young children acetone acidosis (cyclical vomiting) may give difficulty in diagnosis from appendicitis. There may be severe vomiting, with abdominal pain, and the caecum may be distended and tender. The smell of acetone from the breath and the urinary findings should distinguish." (Tenth edition, p. 533.)

I desire to suggest that in some of these cases appendicitis may be the real disease, the acidosis merely a reflex effect.

Appendicitis in children is very common, much more so than is generally recognized. I believe the majority of cases of so-called colic are primarily appendical, and that a large proportion of the cases of so-called chronic appendix which are met with to-day during abdominal operations have originated in early childhood. In the "nervous child" such an appendix may give rise to a variety of reflex symptoms, even in the absence of any local signs.

CASE VI.—*Epilepsy.*

In July, 1919, I was asked to see Mr. H., aged 37, who for years had been the subject of epileptic attacks. In 1904 he had an attack of what seemed to have been appendicitis, and was

* This paper was read before the Section of Surgery of the Royal Academy of Medicine in Ireland on February 18th; the discussion which followed was published in the JOURNAL of March 19th (p. 517).

laid up for a week. When I saw him he was the subject of chronic indigestion of the appendical type. He was taking bromide regularly to control his epilepsy.

Operation was advised (1) for relief of the indigestion, (2) in the hope that it might benefit the epilepsy. A large, distended, adherent appendix was removed from the ileo-caecal angle.

He made an uneventful recovery. He had no epileptic attack for six months after operation, and since that time the attacks have been much less frequent and less severe.

It seems reasonable to infer that if this appendix had been removed at a much earlier stage, before the epileptic habit had become confirmed, the result would have been much better, and possibly the disease might have been cured.

CASE VII.—*Petit Mal.*

In May, 1922, I saw a boy, aged 10, a doctor's nephew, who had for some years suffered from attacks of petit mal, which were increasing in frequency. I was asked to see him owing to an attack of abdominal pain. We regarded the case as one of appendicitis, and advised operation. His mother at once pointed out that he had these nervous attacks, and asked whether there would be any chance of the operation making them worse. Our reply was that there was every reason to hope it would make them better.

At operation we found a distended, obstructed appendix.

He made an uneventful recovery. The attacks of petit mal disappeared, and he is now a boarder at a public school, in excellent health.

Let it be clearly understood: I do not propose that every case of migraine, cyclical vomiting, or epilepsy should be submitted to an appendicectomy.

I do wish to point out that this group of cases, which may be classed with hysteria, neurasthenia, and certain cases of mental disease, have one feature in common—that is, a nervous system so unstable that it is liable to be upset by some slight reflex stimulus which would not disturb a normal individual.

A thorough examination for an abdominal focus should be carried out in every instance. A misplaced uterus, or a movable kidney, will often afford an explanation, but I venture to suggest that a diseased appendix will prove to be the exciting cause much more frequently than we have hitherto suspected.

When there is good reason for suspicion of that organ, appendicectomy should be seriously considered.

THE TREATMENT OF RODENT ULCERS NEAR THE EYE.

BY

ZACHARY COPE, M.S., F.R.C.S.,

SENIOR SURGEON TO THE BOLINGBROKE HOSPITAL.

THE satisfactory treatment of rodent ulcers in the region of the eye and nose is sometimes a little difficult. For very small lesions the application of carbon dioxide snow may be efficient, in other cases the application of radium or treatment by *x* rays may be recommended, but none of these methods is quite so speedy or efficient as excision, if that can be practised without causing deformity of the face.

If surgical measures are undertaken it is wise to remove the ulcer with a margin of at least half an inch surrounding it. If the ulcer is but the size of a threepenny-bit its removal may leave a space necessitating a skin graft, for to bring the edges of the skin together will distort the eyelids or nose. The difficulty of applying a skin graft in the region of the inner canthus and ala nasi is readily understood. It is almost useless to apply grafts by the Thiersch method unless firm and equable pressure is maintained, and the difficulty of maintaining such pressure in this region is easily appreciable. Following the lines of the well known work of Esser, which has been so skilfully developed by Gillies and others, I at first applied grafts moulded upon Stent's composition. This gave fairly satisfactory results, but the material upon which the grafts were moulded was rather hard to press against the bony root of the nose, and if the mould was not absolutely perfect equable pressure over the whole area was not maintained. In searching for a suitable moulding material I thought of a substance which would be less hard when cold, but would enable pressure to be applied over the whole grafted area. Plasticine was therefore tried and proved suitable. This material was used because it was most readily obtainable, but ordinary artist's modelling clay would, I think, serve equally well, if not better.

The technique of the method is as follows. Under a general anaesthetic the ulcer is excised with half an inch of apparently healthy skin all round. Any bleeding vessel is seized by artery clips and oozing from smaller vessels checked by gauze pressure. Fine catgut may be used to ligature any larger vessel if necessary, but it is better to do without ligatures if torsion and forcipressure will suffice. Whilst the raw area is being made dry by pressure the surgeon takes up a piece of modelling clay which has been boiled in order to sterilize it, and breaks off a portion of a suitable size for the graft. It is then carefully moulded over the raw surface and contiguous surface of the root of the nose and upper or lower eyelid, and put aside whilst the outer aspect of the thigh is exposed for the purpose of cutting the grafts. The grafts are cut in the usual way by a razor or special knife, and are placed on the area of the clay previously moulded on to the raw surface, with their deep or raw surface outwards, so that when the mould is applied to the part of the face operated upon raw surface of graft meets raw surface of face. The grafts should more than cover the actual part of the clay which fitted the ulcer. The clay with grafts on it is carefully fitted on to the place from which the growth was removed and pressure is maintained by strips of strapping. A simple dressing is applied over this. The parts are not touched for about ten days, at the end of which time the dressing and clay can be removed. The grafts should then be firmly adherent and no raw surface be seen. A simple dressing may be applied and maintained in position by strapping for a week or two. The superficial scab of epithelium will gradually separate and leave a healthy depressed and firm scar. In the course of a few months this scar rises and restores an almost normal appearance to the site from which the rodent ulcer has been removed.

MICROSCOPICAL AND CHEMICAL EXAMINATION OF STOOLS IN YOUNG CHILDREN.

BY

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AND

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IN order to ascertain what information might be gained by systematic examinations of stools in young children, careful observations were made during 1924 and 1925 on patients in the observation ward at the Carnegie Institute, Birmingham. As there was some variation in method and nomenclature during the early period, these notes deal exclusively with the cases of 1925, when a more definite system had been instituted.

Chemical examinations have been made with the object of ascertaining the reaction, and the presence or absence, of occult blood; the microscopic examination has included Gram-stained films for the bacterial flora, and examination for pus, fat, etc.

Stools have been examined from cases of subacute and chronic enteritis; convalescents from enteritis; children with no intestinal disorder and with normal stools; cases of constipation; and breast-fed infants. All the patients were children under the age of 5.

(A) *Chemical Examination.*

In the cases suffering from enteritis, 54 per cent. of the stools were acid, including all the more acute cases. Blood was found in 83 per cent. of the cases. Pus and epithelial cells were frequently found on microscopical examination of the wet preparation. As the patients improved the stools became alkaline, only 22 per cent. remaining or becoming acid. Blood was still found in 50 per cent. of the patients who had clinically quite recovered. Of the normal stools, 90 per cent. were alkaline, and blood was

found in 20 per cent., although the patients showed no sign of gastro-intestinal disorder. Most of these cases, however, had a history of previous intestinal disorder. Constipated stools were always alkaline, and blood was present in 33 per cent. All the breast-fed infants whose stools were examined were suffering from enteritis, all the stools were acid, and 80 per cent. contained blood.

The high percentage of stools containing occult blood in the subacute and chronic intestinal disorders of infancy is a fact which has not apparently attracted attention. The test used was the benzidine test, which is very delicate. The persistence of a positive reaction after convalescence and even recovery are established is also a point of some interest.

(B) *Bacteriological Examination.*

It has been found impossible to ascertain the causal agent of bowel irritation from the examination of the Gram-stained films. They showed a very mixed flora which might exhibit a preponderance of Gram-negative or Gram-positive organisms. In many cases of enteritis, particularly the acute cases, the Gram-stained film showed a large number of Gram-positive cocci (staphylococci and, more rarely, streptococci); with recovery the film tended to become more Gram-negative. This may have some significance. There is no such thing as a "normal" Gram film. Cocci, however, are rarely a prominent feature. The Gram-stained films in the breast-fed infants showed almost in every instance a uniform picture of slender Gram-positive rods, which may be taken as the normal flora of the breast-fed infant's stool.

In cases of enteritis treated with lactic acid milk (culture) the change in the flora was interesting; it was to a higher percentage of Gram-negative organisms.

The following are the tabulated figures:

	Number.	Alkaline.	Acid.	Neutral.	Blood.	Mixed Film.	Gram + Predominance.	Gram − Predominance.	Cocci +.
Enteritis stools ...	46	44%	54%	2%	83%	—	28%	18%	54%
Convalescent stools	31	68%	22%	10%	50%	13%	32%	42%	13%
Normal stools ...	20	90%	10%	—	20%	90%	—	—	10%
Constipated stools ...	6	100%	—	—	33%	100%	—	—	—
Breast-fed infants' stools	5	100%	—	—	80%	20%	80%	—	—

Memoranda:

MEDICAL, SURGICAL, OBSTETRICAL.

TAPEWORMS AND MEAT INSPECTION.

THE following account may be of interest partly because human cases of tapeworm infection are nowadays supposed to be comparatively rare in England, and partly because it raises a doubt whether even fairly close routine meat inspection is likely to detect the small cysts of *Taenia saginata*.

The three patients all came to consult me within a week, and it would be best, perhaps, to give a short history of each.

CASE I.

On January 12th, 1927, Miss A. came to me because for about eighteen months she had been passing some whitish things like vermicelli in her motions. I found them to be segments of *Taenia saginata*; on treatment with extract of *filix mas*, the tapeworm, many feet in length, was evacuated. The patient had suffered from severe nervous depression and "biliousness."

CASE II.

On January 18th, 1927, Mrs. B. told me that she was passing some flat, whitish objects. On examination of the stools, segments of *Taenia saginata* were seen, some well over an inch long. Treatment with extract of *filix mas* resulted again in the evacuation of a tapeworm several feet in length. The patient had suffered since 1924 from backache and depression, and is now feeling much better; curiously, she had been putting on weight, a rather surprising symptom for a tapeworm to produce.

CASE III.

On January 17th, 1927, Mr. C. consulted me, bringing with him a pot containing about six feet of tapeworm that he had just passed. This again proved to be *Taenia saginata*, and the rest of the tapeworm (quite six feet more) was evacuated by means of extract of *filix mas*. He looked rather thin and anaemic, and felt depressed.

It has, I think, been absolutely proved that *Taenia saginata* in man is due to the eating of infested beef. Yet Cases I and II are both religious Jewesses and have never been out of England; they take their meat from different butchers, but this, of course, does not exclude the possibility of the infection having come from the same animal. Their meat is always examined both by the British meat inspectors and by the Jewish trained slaughter officials, and at home, as well, during the process of "koshering" any abnormalities are likely to be detected. Case III has never been further away from England than France; he states that he ate a great deal of partially cooked meat in France about two years ago.

The specimens from the above cases were identified by Professor R. T. Leiper, F.R.S.

London, N.5. J. VICTOR LANDAU, M.D.Lond., D.P.H.

ULTRA-VIOLET RAYS IN THE TREATMENT OF RICKETS.

SINCE the curative properties of artificial ultra-violet rays in rickets were demonstrated, eight years ago, there has been difference of opinion as to the most suitable source of the rays. During the past eighteen months we have attempted to ascertain the relative curative value of different types of lamps.

All the patients selected suffered from severe active rickets, as shown in radiograms of the wrist; radiograms taken at frequent intervals formed the criterion of the progress of healing and of ultimate cure. All the patients were kept in the same environment and were given a standard antirachitic diet rich in fats and poor in carbohydrates; in addition they were all given cod-liver oil. The ages of the patients ranged from 1 to 4 years.

Group A.—Fifteen patients were given the standard diet and cod-liver oil, but no ultra-violet radiations. It was found that on an average a severe case of rickets was cured in fifteen weeks. These cases are included for comparative purposes.

Group B.—Eleven patients were exposed on alternate days, at a distance of 30 inches, to the rays of an open-flamed carbon arc lamp consuming 35 amperes, for periods of ten minutes increasing to one hour. It was found that these patients were not more rapidly cured than those in the first group, the average time being fifteen weeks.

Group C.—Eight patients were exposed on alternate days to the rays of an arc lamp burning electrodes of carbon cored with tungsten-molybdeno powder, at a distance of 32 inches. The initial exposure of two minutes was slowly increased to five minutes. It was found that the average time necessary to effect a cure was eight weeks.

Group D.—Four patients were exposed twice a week to the rays of a K-B-B mercury vapour atmospheric lamp, at a distance of 20 inches. They were cured in approximately five weeks.

The radiological evidence of cure does not apparently synchronize with the clinical evidence, for the square head, beading of the ribs, and deformities of the limbs may persist long after the radiogram of the wrist presents a normal picture. The antirachitic properties of ultra-violet rays seem to be due to those having a wave-length of 3,000 Angström units or less. It is probable that these rays, being absorbed by the deeper layers of the skin, there activate a vitamin precursor, converting it into a potent antirachitic vitamin, which is liberated into the circulation.

The mercury vapour lamp, giving as it does an abundance of rays around 3,000 Angström units and beyond it, proved the most potent in the treatment of rickets. The rays emanating from the carbons cored with tungsten-molybdeno powder, while not being so powerful, were still definitely antirachitic; whereas the carbon arc lamp with its wealth of "near" ultra-violet rays does not apparently possess any marked antirachitic properties.

We wish to thank Dr. P. Macdiarmid, the medical superintendent of Alder Hey Hospital, for his permission to make use of these statistics.

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CARCINOMA OF THE MALE BREAST.

CASES of carcinoma of the breast in males are sufficiently rare to warrant placing on record.

A man, aged 63, was sent to me by Dr. Langmuir with a view to admission to the Glasgow Royal Infirmary. The patient stated that the condition began several months previously as a small "boil," which repeatedly broke down and healed again, and gradually increased in size. He had been losing weight for the past six months, and, for a couple of weeks prior to admission, had experienced pain in the breast region, and extending down the arm.

An ulcer about the size of half a crown, covered by a brown crust, and surrounded by an inflammatory zone, was found in the position of the right breast, the nipple having been entirely destroyed. It was hard to the touch and was adherent to the pectoral fascia, but moved on the subjacent structures. The axillary glands were extensively involved and hard; several were much enlarged.

Operation was performed as for removal of the female breast, together with muscles and axillary contents. The areolar tissue in the axilla was unusually dense and fibrous, rendering removal of the glands more difficult than usual, particularly those surrounding the vein. Enlarged glands extended up to the apex of the axilla, under the clavicle.

Microscopical examination of the tumour and of the axillary glands by Dr. Burton showed it to be a scirrhous carcinoma of the atrophying type. The Wassermann reaction was negative.

The patient has made an uninterrupted recovery.

JOHN A. C. MACEWEN, M.B., C.M., F.R.F.P.S.,
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CAVERNOUS ANEURYSM OF THE CAROTID.

THE following record of a rather unusual case in which the diagnosis of carotid cavernous aneurysm was made will be of interest.

A married woman, aged 30, had suffered since adolescence from severe headache on the right side, accompanied by attacks of vomiting, and preceded by sensations of spots in front of her eyes. Since marriage, eight years ago, her husband had detected a curious noise proceeding from her head. Five years ago she had "attacks" preceded by hunger; her lips became red, she suffered with cold shivers, and then developed biliousness and faintness. She had been losing weight. She had scarlet fever four and a half years ago, and four years ago a convulsive attack nine days after the birth of her second child; since then the attacks had been worse. She menstruated every three weeks with severe loss.

I found the thyroid gland uniformly enlarged, and a systolic murmur was audible over it. There was slight exophthalmos. The cardiac apex beat was 3¼ inches from the mid-line, and there was a systolic apical murmur connected both inwards and outwards; this murmur became less when she was kept in bed, and it did not appear to be organic. She had a fair tolerance for exercise; there was no sign of failure of compensation, and the blood pressure was 120/80. By listening over the head a systolic and diastolic murmur could be heard behind both ears, and a systolic murmur alone over the vertex. The patient was aware of a noise in her head, which became worse when she was worried. No abnormality was found in the eyes and there was no pulsating exophthalmos.

I came to the conclusion that this was a case of carotid cavernous aneurysm; I find in the literature that this may occur spontaneously after childbirth. Assuming this diagnosis to be correct, the question is whether such a condition would account for the symptoms, including those resembling migraine. Could such a condition be congenital and be made worse by childbirth? Could any effective treatment be recommended?

Johannesburg. H. L. HEIMANN, M.D., M.R.C.P.

INFLUENZAL NEPHRITIS AND PYELITIS.

NEPHRITIS and pyelitis seem to have been more common complications of influenza during the recent epidemic than is usual. To the several cases already recorded in the BRITISH MEDICAL JOURNAL (December 11th, 1926, April 2nd, 1927, etc.) can be added some cases treated at the Bristol Royal Hospital for Sick Children and Women.

E. P., female, aged 13. Influenza; followed by (about a week later) epithelial casts, red blood corpuscles in urine, and slight generalized oedema.

E. J., female, aged 6. Combination of epithelial casts and pus cells in urine, and slight oedema.

J. B., female, aged 11. Pyrexia; many red blood cells and some pus cells.

S. B., female, aged 12. Pyrexia; many red blood cells and many pus cells (sent in as an acute abdominal case).

The above cases were characterized by the rapidity with which they cleared up. Cases of haematuria (influenzal) have been recorded (*Medical Echo*, March, 1927) which, together with the cases of albuminuria and those of true nephritis, raise the question as to whether they were different stages of the same disease, just as in the respiratory system one may get aborted cases of pneumonia.

In the eighth edition of Osler's *Principles and Practice of Medicine* it is noted that G. Baumgarten has called attention to the frequency of nephritis as a complication of influenza, though Holt states that it is only occasionally seen.

I am indebted to the kindness of Dr. O. C. M. Davis, senior physician to the hospital, for permission to submit these cases.

J. L. DELICATI, L.M.S.S.A.Lond.,
House-Physician, Bristol Royal Hospital for Sick Children and Women.

Reports of Societies.

ICHTHYOSIS AND CANCER OF THE SKIN.

AT a meeting of the Section of Dermatology of the Royal Society of Medicine on May 19th, Dr. J. H. SEQUEIRA, the President, in the chair, a paper was read by Dr. LOUIS SAVATARD of Manchester, on ichthyosis and cancer of the skin, with special reference to mule-spinner's cancer.

Dr. Savatard considered that it was quite justifiable to regard xerodermia pigmentosum as a precancerous inflammation of the skin, because in this comparatively infrequent affection it was the rule rather than the exception for cancer to supervene, but he did not think that the fact that xerodermia simplex, or ichthyosis simplex, was also a frequent precursor of cancer was yet recognized as it should be. He considered ichthyosis of the skin of importance as predisposing to skin cancer. In some cases of external cancer, by making a routine examination of the skin of the whole body, he had found lesions not previously suspected even by the patient, and in some of these ichthyosis was present also. This was especially the case when carcinoma was found supervening on a keratotic skin condition. It was not improbable that the keratosis was secondary to the ichthyosis, and might be the precursor of all types of carcinoma and the first sign of squamous carcinoma to be clinically recognized. Dr. Savatard then exhibited a patient whom he had brought from Manchester, illustrating this condition, together with slides of about a dozen cases. He mentioned that Dr. Prosser White of Wigan had described what he called "shagreen skin" occurring in mule-spinners, but among the Manchester mule-spinners whom he had seen he had not noticed this condition, and he regarded this type of skin as only ichthyosis, which was fairly common in Lancashire. Among 400 mule-spinners whom he had seen the incidence was 5 per cent. These mule-spinners, whom he had had an opportunity of examining at their work, were of various ages, and the twenty of them who had ichthyosis (in ten only in a mild degree) included both youths and men. Two out of the twenty had suffered from cancer of the scrotum. From the observations he had been able to make he was convinced that ichthyosis was an important etiological factor in mule-spinner's cancer. He was sorry to see that the departmental committee on mule-spinner's cancer[1] had reported that in the absence of exposure to mineral oils there would be no mule-spinner's cancer. Dr. Robertson, medical officer of health for Darwen, as a result of his own investigation, had come to the opposite view.

Dr. ARTHUR WHITFIELD said that in his opinion Dr. Savatard had attributed to ichthyosis an importance which was hardly warranted. It was true that the ichthyotic skin was a poorly nourished skin, especially in respect of the absence of true maturity of the horny cell, as well as the production and exudation of grease. Since the ichthyotic patient started life with a skin defect in the

[1] Departmental Committee Report on Occurrence of Epitheliomatous Ulceration among Mule-Spinners (1925). London: H.M. Stationery Office. Summarized, BRITISH MEDICAL JOURNAL, April 24th, 1926, p. 746.

direction of senility he might on that account show a tendency to the development of skin cancer. The speaker had not seen malignant keratosis in a keratotic subject.

Dr. GRAHAM LITTLE thought it must be rare for carcinomatous changes to be seen in association with senile keratosis.

Dr. H. MACCORMAC said that for a long time he had been definitely of opinion that there was a tendency for the prickle-cell type of carcinoma to take origin in some condition of the skin which could be definitely termed "pre-cancerous." He had seen, especially among Australians during the war, cases in which cancer developed on portions of the skin which had been exposed for long periods to powerful sunshine. The term "senile keratosis" was variously used by different dermatologists.

Dr. A. M. H. GRAY thought it would be comparatively simple to find out how many cases of carcinoma of the scrotum occurred among those whose work was not concerned with oils, tar, pitch, soot, or other substances which were well known to be skin irritants. His opinion was that it was rare to find carcinoma of the skin unassociated with occupations of this kind.

Dr. SYDNEY THOMSON remarked that among a large number of patients with ichthyosis whom he had seen none developed a warty growth of any sort. He reminded members that there was a well marked topographical distribution in the case of ichthyosis, and this was not the case with "senile skin."

Dr. H. W. BARBER raised the question of the association of multiple superficial basal-celled carcinomata with psoriasis, and asked whether psoriasis was more likely to occur in people who had a skin habitually dry than in people with normal skin.

Dr. SAVATARD, in reply, said that he fully recognized that oil, tar, soot, and like substances caused cancer. But his point was that if a routine examination of the whole of the skin of patients was made, cancer would be found more frequently in those with an ichthyotic skin than in others.

INTERNAL SECRETIONS OF THE OVARY.

AT a meeting of the Section of Obstetrics and Gynaecology of the Royal Society of Medicine on May 20th, Dr. A. DONALD in the chair, Dr. A. S. PARKES read a paper on the internal secretions of the ovary.

Dr. Parkes stated that up to the present time all that was known about the nature and properties of these secretions had been derived from experiments upon animals. His own work had been done on rodents, but he thought that it would be safe to assume that the secretions of the ovary were governed by the same laws in all mammals. The ovarian cycle consisted in the maturation of the Graafian follicles leading up to the production of the corpus luteum, together with the associated changes in the accessory organs of generation. The changes in the uterus during this period were well recognized, decidual tissue being formed in the endometrium in preparation for reception of the fertilized ovum. In the case of the mouse and rat these preparatory changes in the uterine mucosa were slight, as the ovarian cycle did not go beyond maturation of the ovarian follicles, and no corpus luteum was produced until fertilization. In the pig and the cow, however, the reverse was the case; the corpus luteum was fully developed and persisted for a long period, and, consequently, extensive preparation was made by the endometrium. Thus decidual tissue was found in the uterus in large amounts until the corpus luteum involuted. The "luteal phase" was also predominant in the ovarian cycle of the dog and the rabbit. Instances of pseudo-pregnancy in these animals were well known and numerous: the rabbit plucking its fur to make a nest, and the mammary glands of the bitch undergoing hypertrophy accompanied by secretion of milk. In the human being the same state of affairs existed, though perhaps not to so marked a degree. Ovulation occurred about thirteen to fifteen days after the first day of the preceding menstrual period. The premenstrual changes in the uterus, breasts, and other organs of generation were probably under control of the corpus luteum, which became functionally active at this stage. The relation of the ovary as a whole to the accessory organs of generation was of great interest; thus its presence was necessary for the development and activity of these organs and of the accessory glands affected by the ovary. The control was supposed to be endocrine in nature. The extraction of the active principle, or principles, of the ovary was next considered, particularly with regard to the production of oestrus in the ovariotomized animal. The difficulty of finding a reliable test for true oestrus had been largely overcome by the researches of Allen and Doisy in America, who demonstrated the characteristic changes found in a vaginal smear during the oestral cycle. The original source of the oestrus-producing hormone was the liquor folliculi; theoretically, therefore, maturation of the Graafian follicles produced oestrus. Substances which produced this effect had, however, been isolated from the ovarian stroma, the fluid in the corpus luteum, and from the placenta. To the corpus luteum had been ascribed the powers of (1) sensitization of the endometrium for the reception of the fertilized ovum; (2) the maintenance of pregnancy; (3) the inhibition of oestrus in pregnancy; (4) the development of the breasts; it was improbable that one substance was responsible for all these. The extract of the corpus luteum was very unsuccessful, clinically, as a substitute for the living gland, yet experimental injections of the extract inhibited oestrus in animals. As a result of these observations it seemed highly probable that there were two secretions of the ovary—the oestrus-forming and the oestrus-inhibiting secretions; in this way the "oestrus-producing hormone" and the corpus luteum acted in opposition. Theoretically, therefore, an injection of the oestrus-forming hormone overriding the corpus luteum should bring about the termination of pregnancy, and, as a method of induction of labour, would be of great value clinically. The extracts of the corpus luteum on the other hand would provide a means of treating such conditions as persistent amenorrhoea, repeated miscarriages during pregnancy, and mammary insufficiency. It was doubtful whether any improvement in cases of infantile uterus would be obtained from administration of the oestrus-producing hormone. Experimentally, as a result of the injection, the infantile uterus underwent hypertrophy which appeared to be evanescent. Dr. Parkes demonstrated by slides the relative development of the Graafian follicles and corpora lutea during the menstrual cycle, and also showed that in mice ovariotomy before and after puberty produced deficient development in the organs and accessory organs of generation.

The CHAIRMAN said he had been disappointed in the clinical effects of the administration of ovarian extracts; he was unable to claim any success.

Professor BLAIR BELL considered that the histology of the ovary, uterus, and other organs of generation must be more fully considered, and that further study should be devoted to the ovary in regard to its local and metabolic actions. It was now well established that the corpus luteum persisted in cases of pseudocyesis. The interstitial cells of the ovary alone would keep the uterus "sexually active," as had been proved by the administration of x rays, which destroyed the superficial cells of the ovary, and therefore the follicles, leaving the interstitial cells.

Dr. BOURNE stated that he had used "oestrin" for the induction of labour on three occasions, administering doses of between 20 and 40 rat units, but with clinical results in only one case. He had also given this substance in a case of sterility with amenorrhoea. He looked forward to the day when ampoules of oestrin could be supplied in doses of over 40 rat units and its injection be made less painful. He was certain that much larger doses than 40 rat units would be needed to be of any clinical value. Until these problems were solved he was convinced that ovarian therapy would make but very slow progress.

Dr. PARKES, in reply, said he hoped the day was not far off when a water-soluble preparation would be on the market. Experiments had been performed upon goats, and it had been found that whereas a dose of 500 rat units produced abortion, 300 rat units injected into a larger animal did not do so.

Reviews.

EXOPHTHALMIC GOITRE.

THE trend of modern thought in regard to Graves's disease is reflected in Dr. JOHN EASON's recently published book on *Exophthalmic Goitre*.[1] Ten years ago those who doubted the thyrogenic nature of this malady, or who affirmed that "the routine treatment of Graves's disease is not surgical," were in the minority. But in these later years this attitude of mind has spread, and to-day the measure of our independence of thyroidectomy is a fair measure of our advance in knowledge.

Dr. Eason's book is divided into two parts: The first is introductory and deals, in two chapters, with anatomical and physiological considerations and with the clinical examination of the thyroid gland, the last being excellently described. The second has one chapter on etiology, three on clinical features, and one each on diagnosis, pathogenesis, pathology, prognosis, and treatment; all very detailed. A list of selected references is given and an index is provided. Those who study this book—and it requires close study—will be impressed by the painstaking manner of its preparation, by the comprehensive way in which the subject is presented, and by the slow growth of new knowledge regarding the nature of that morbid product of modern life—exophthalmic goitre. "It is sometimes stated," Dr. Eason says, "that the etiology of the disease is unknown, yet the circumstances in which it develops are known with a remarkable definiteness in the majority of cases." Of these circumstances an inborn or acquired "diathesis" or "autonomic imbalance" is considered to be the chief. Given this peculiar habit of body in a person of the female sex, in the period of active sexual life, who is of "light skeletal *build*, with fine bones, narrow build, acute costal angle, small muscles, and poorly hung viscera," subject her to adequate excitation—unusual nervous strain, prolonged emotional disturbance or infection—and the stage is laid for the tragedy. "Why is it," the author asks, "that the gracile type has a special tendency to exophthalmic goitre, while others, equally exposed to exciting factors, are less liable according as they are more powerfully built and more masculine?" The reader may agree with Dr. Eason that this question goes to the root of the problem, but he will probably be more concerned to know the cause of the "inborn or acquired diathesis" or "autonomic imbalance" which predisposes to Graves's disease. "In proportion as the individual is originally nearer the folio edition of the genus homo (the A1 type) the adequate excitation must be greater and greater." Conversely, we may suppose, the nearer the individual is to the C3 type the less proof is she (or he) against exophthalmic goitre. Has the disease, then, a nutritional basis?

Dr. Eason does not say much regarding the underlying nutritional factors in its genesis; but what he does say calls to mind the remarkable effects of faulty nutrition on skeletal structure, on absorption and assimilation, on all endocrine organs, on the nervous tissues, on the reactions of the body fluids, and on susceptibility to infection—effects learnt by experiments on animals. Dr. Eason thinks that "observations made on animals regarding the thyroid provide no solid contribution to our knowledge of the etiology and pathogenesis of exophthalmic goitre"; but surely it is by observations on animals that we may learn more of the part played by the thyroid gland in the animal economy, more of its relation to the phenomena of nutrition, and more of the disturbances directly or indirectly induced in it, in its coadjutors and in the autonomic nervous system, by faulty nutrition. "The fundamental conception of exophthalmic goitre is," the author says, "that it is a disorder which is due to a kinetic vicious circle." Of exciting factors there are many, but "by a very long way first in importance are those that operate through the emotional centres of the brain." This view will be endorsed by many who have for long been of the same opinion. For there are few diseases in which "thick-coming fancies" do more to initiate and to maintain the sufferer's disabilities:

> "Cure her of that . . .
> Pluck from the memory a rooted sorrow,
> Raze out the written troubles of the brain,
> And with some sweet oblivious antidote
> Cleanse the stuff'd bosom of that perilous stuff
> Which weighs upon the heart?"

Dr. Eason keeps this aim prominently before his readers.

To those of us who are especially interested in the causation of this disease the last two pages (the appendix) will be amongst the most valuable in the book. If a sufficiently large number of cases of Graves's disease were accurately recorded, according to the scheme therein set out, and competently analysed by persons skilled in scientific method, our knowledge of the physiological mechanism—nervous and endocrine—of exophthalmic goitre would not long remain "so imperfect that the clinician cannot grapple satisfactorily with the problems of its origin and nature."

Dr. Eason's book should help to dissipate that "dormant attitude of mind of medical men in general," regarding the place of medicine in the routine treatment of this disease, about which Dr. Bram complained in the second edition of his book on *Goiter*.

R. MCCARRISON.

[1] *Exophthalmic Goitre*. By John Eason, M.D., F.R.C.P.E. Edinburgh and London: Oliver and Boyd. 1927. (Med. 8vo, pp. xii + 215; 34 figures. 12s. 6d. net.)

MARIE'S COLLECTED PAPERS.

PROFESSOR PIERRE MARIE has decided to bring together a number of his literary productions and publish them in book form, and the first volume has recently appeared bearing the title *Travaux et Mémoires*.[2] The reason he gives in his preface for making this decision is that the original articles are distributed in weekly journals and reviews, many of which have now ceased to exist, or are to be found in but few libraries to-day. This, he states, simply means annihilation for these works, some of which may deserve to survive yet a time longer. Such is the modest view he takes of works which will probably ever be consulted in the first instance by all who enter on the study of the subjects with which they deal. The articles have lost none of their freshness through the lapse of years (the earliest was published in 1886), and can be read with as much interest now as at the time of their publication. The volumes will be a valued addition to our libraries. That now before us consists of two parts, the first containing the well known articles on aphasia, the second the descriptions of a number of diseases of the skeletal system which Marie was the first to recognize as distinct entities. The articles on aphasia take us back to the year 1906, when Marie the iconoclast, as Head has called him, published a paper on the revision of the question of aphasia, which shook the current theories of aphasia to their foundations. The conceptions then prevailing were characterized by such simplicity that they could be represented on charts somewhat resembling those indicating the stations on the tube railway. There was a definitely localized auditory word-centre, a visual word-centre, a motor centre for articulation, and another for the movements in writing; these centres were connected by intercommunicating and branch lines. In any given case of aphasia it was possible, by handling the clinical symptoms with a certain amount of freedom, to indicate the lesion on the chart and define the type of the aphasia. Marie swept all this away. He showed that a number of important symptoms had been left out of account in the current views on aphasia, and that the condition was not due to the suppression of this or that definitely localized function, but depended on a more general and, in particular, an intellectual defect. He so far retained the notion of localization that he referred aphasia to changes in the so-called area of Wernicke—the supramarginal, angular, and posterior ends of the first and second temporal gyri. Further, he separated anarthria—inability to speak—from aphasia, and located the changes producing it in and about the lenticular nucleus. Finally, he considered Broca's aphasia—that is, aphasia with inability to speak—to be a combination of anarthria and

[2] *Travaux et Mémoires*. Par Pierre Marie. Tome Premier. Paris: Masson et Cie. 1926. (Med. 8vo, pp. 358; illustrated. 35 fr.)

aphasia in the sense in which he used the latter term. Speaking generally, Marie cleared the ground of dogmas and left the way open for a study of the subject on psychological lines.

The second part of the book contains reprints of the well known articles on acromegaly, hypertrophic pulmonary osteo-arthropathy, rhizomelic spondylosis, hereditary cleido-cranial dysostosis, and achondroplasia. All of these, with their excellent illustrations, are of enduring value.

PHYSIOLOGICAL AND PATHOLOGICAL CHEMISTRY.

Two parts of the first volume of Professor OTTO FÜRTH'S textbook of physiological and pathological chemistry[3] have already been reviewed in these columns. Part III, completing the first volume, is now in our hands and allows us to extend to the whole volume the commendation we expressed of the earlier parts. The habit of issuing a large textbook as a serial has obvious advantages to both author and publisher, though its benefit to the reader is not apparent. Perhaps we may suspect in this policy a compromise by which the bookseller—that aristocrat amongst tradesmen—brings himself to engage in trade upon the instalment plan. The duty of the reviewer of an enterprise which must be seen whole to permit judicious appraisal is certainly rendered more difficult by such method of publication. The comprehensive character of the labour which Professor Fürth has undertaken and the admirable way in which he appears to be executing it forbids, however, our grudging him the small satisfaction of transferring now and again to the publisher the growing pile of manuscript on his desk.

The present part deals with the biochemistry of the main organs of internal secretion. The chapters are devoted to the male and female sex organs, the adrenals, the thyroid and parathyroid, and the pituitary. In addition, chapters are given to the subjects of fertilization and the development of the egg, to the mammary gland and the chemistry of milk, and to the biochemistry of malignant growths. An immense literature has been drawn upon, and the discussion is admirably up to date the while a reasonable critical faculty has been preserved. Part III of Volume I gives us no cause to qualify the welcome we have already extended to this work.

THE SEMILUNAR CARTILAGES OF THE KNEE.

UNDER the title of *Pathologie des Ménisques du Genou*,[4] Professor LOUIS TAVERNIER and Dr. ALBERT MOUCHET have written a monograph on internal derangement of the knee-joint, and have included in it a section on cysts of the fibro-cartilages. As the authors acknowledge, it is only of late years that the operative treatment of these lesions has received much attention in France or indeed in Germany, nor until in England a whole literature had grown up round it and thousands of cases had been successfully treated by surgical intervention. Therefore there is much more need and use for a work of this sort in France than there is in Great Britain.

The authors begin by a clear and well illustrated description of the normal anatomy of the joint and of the functions and action of the semilunar fibro-cartilages. In the passage on etiology we note with interest that, as regards sport, a distinction is made between "foot-ball" and "Rugby." The authors rightly state that injuries of the cartilage are by no means confined to the devotees of sport, and quote the statistics of Martin of Newcastle-on-Tyne to show its great frequency among miners. The pathological anatomy of the various lesions is well described and illustrated by clear drawings, which we think serve their purpose better than photographs; the latter are apt to be rather obscure when taken from such subjects, owing to lack of contrast. The authors are very sceptical as to the occurrence of what Roux of Lausanne has described as "traumatic meniscitis," and their caution is justifiable. They give reasons for doubting the correctness of the "Anglo-American" view that one of the chief causes of damage to the menisci is rotation of the leg on the thigh. They hold that extension alone can, and does, produce it, when there is friction or obstruction between the condyles of the femur and the fibro-cartilages. The operation of arthrotomy for the removal of a cartilage is clearly described and well illustrated. The line of incision recommended is transverse, and in the usual case of the internal cartilage it involves section of the internal lateral ligament, sacrificing perhaps subsequent security of the joint to freedom of access and width of view. If we read them aright a similar division of the external ligament is recommended in the case of the outer cartilage, but the tendon of the biceps is to be respected.

The last few pages are devoted to the subject of cysts of the cartilages, which are almost always the result of injury and situated on the outer side of the joint. There is a full bibliography, but no index.

CANCER OF THE BREAST.

No one, says Professor DELBET in his work on cancer of the breast,[5] would think of treating a cancer of the skin without taking into consideration the histological type of the growth. Cancers of the breast exhibit differences of type which are just as marked, and yet Professor Delbet says it is the custom to regard them as if they were all of the same species. With a view to correct this inconsistency he has passed under review all the preparations of tumours of the breast in his laboratory, has traced the after-histories of the patients as far as possible, and has found that certain histological characters, noted without any preconceived ideas, appear to be related to a definite course of the disease. He considers that histology enables the prognosis to be made in many cases, and that some growths can be shown to be relatively benign. Keeping in view the prognostic significance of the histology, he has adopted a classification which does not pretend to be strictly systematic and which has a threefold basis—namely, the morphological characters, the physiological characters, and the tendency to invasion of the blood vessels. Eight morphological classes are distinguished, depending on variations in the characters of the cells—namely, (1) cubo-cylindrical, (2) squamous, (3) polymorphous of mammary type, (4) polymorphous of ectodermal type, (5) clear cell type, (6) cytolytic type, (7) isolated cell type, and (8) giant cell type. The first of these is further subdivided according as the cells are arranged in pseudo-acini within the cell mass, in definite acini bounded by connective tissue, in the form of tubules, as papillary ingrowths, or on the type of a perithelioma. The clear cell type is said to resemble in every detail the so-called hypernephroma; the cytolytic type is characterized by a liquefactive disintegration of the periphery of the cytoplasm, which is attributed, not to degeneration, but to a particular form of evolution of the cell; in the isolated cell type the cells show no tendency to stick together, a feature which is said to favour their dissemination; in the giant cell type the cells are of great size and, in the zone of invasion, often multinucleated. With regard to prognosis the authors are able to state that growths of the cubo-cylindrical type with pseudo-acini are relatively benign, the same being true also of the clear cell type. On the other hand, the large cell type is extremely malignant.

The physiological classification is based on the visible secretion of the cells. Three classes are recognized, one exhibiting an albuminous, the second a mucous, and the third a mixed muco-albuminous secretion. The mucous type is held to indicate a certain degree of benignity, and when occurring in association with a malignant morphological type, the authors consider that the malignity is reduced.

Delbet has given his third class of tumours the not very convenient name of haemophilic cancers. In these the tumour cells exhibit a special affinity towards the blood

[3] *Lehrbuch der Physiologischen und Pathologischen Chemie.* Von Prof. Dr. Otto Fürth. Band I/III. Leipzig: F. C. W. Vogel. 1927. (Sup. roy. 8vo, pp. v + 417-583. M.15.)

[4] *Pathologie des Ménisques du Genou.* Par Albert Mouchet et Louis Tavernier. Paris: Masson et Cie. 1927. (6½ × 9½, pp. 99; 26 figures. 18 fr. sans majoration.)

[5] *Les Cancers du Sein.* Par Pierre Delbet et Mendaro. Paris: Masson et Cie. 1927. (Roy. 8vo, pp. 346; 100 figures, 4 plates. 50 fr. sans majoration.)

vessels, and histologically the growths are characterized by the presence of tumour cells within the lumen of the vessels. This type is met with in any of the morphological forms before mentioned, and is shown by statistics to be of definitely malignant significance.

We are indebted to Professor Delbet and his collaborator MENDARO for a valuable addition to our knowledge of the pathological anatomy and prognosis of cancer of the breast.

COLLOIDAL REACTIONS OF THE CEREBRO-SPINAL FLUID.

THE main interest of the book M. EUGÈNE DE THURZO has written on the colloidal reactions of the cerebro-spinal fluid[6] lies in the suggested modifications in the technique of the familiar gum benzoin, mastic, and colloidal gold tests. By the introduction of suitable dyes into the reagents employed the author has found it possible to develop reproducible colour changes accompanying the turbidity and precipitation changes in the tests. In this way he has been able to differentiate ten degrees of reaction to the tests of the cerebro-spinal fluid at varying dilution. The author discusses from his own experience the relative sensitivities and specificities of the original tests and their modifications in a number of diseases of the nervous system. The value of the paraffin reaction of Kafka and the shellac tests is also reviewed. There is included a description of changes in the colloidal reactions which were found to accompany neosalvarsan treatment of syphilis of the nervous system.

As the author acknowledges, the colloidal reactions of the cerebro-spinal fluid are essentially empirical, and therefore all systematic studies of their diagnostic reliability are of value to those whose business it is to exploit them.

NOTES ON BOOKS.

THE first edition of Professor STEVENS'S *Practice of Medicine*[7] appeared in 1922, and has been widely appreciated. A second edition has recently been published. The articles dealing with syphilis of the circulatory system, botulism, heliotherapy, diabetes mellitus, alkalosis, spasm of the oesophagus, chronic ulcerative colitis, multiple polyposis of the intestine, jaundice, bradycardia, paroxysmal tachycardia, arterial hypotension, primary purpura haemorrhagica, erythraemia, haemorrhagic diseases of the newborn, trigeminal neuralgia, and tumours of the cauda equina have been rewritten. Amongst the diseases not described in the former edition, but now included, are primary meningococcic bacteriaemia, disseminated erythematous lupus, tularaemia, lipodystrophy, agranulocytic angina, uveoparotid fever, vasomotor rhinitis, Epstein's nephrosis, Ayerza's disease, chronic sclerosing osteitis, acrodynia, and Horner's syndrome; among the new articles is one on the etiology of scarlet fever and the Dick test for determining susceptibility to scarlet fever. Dr. Stevens has succeeded in giving a succinct presentation of the various internal diseases, and in these days of increasing specialization owing to the rapid advance of medical science on all fronts, this is no light task. His book is well adapted to the needs of the student and the general practitioner. Numerous references are quoted, and wherever we have sampled its voluminous contents and checked the references given in Dr. Stevens's work, we have found evidence of a wide and accurate knowledge of recent medical literature and a wealth of clinical experience.

The *De Lamar Lectures*, founded in 1920 and now administered by the School of Hygiene and Public Health at the Johns Hopkins University, are intended to inform the public on the prevention of disease and on personal hygiene. The volume of the thirteen lectures given in 1925-26[8] begins with the prevention of simple goitre by Dr. David Marine, director of laboratories at the Montefiore Hospital, New York. Dr. Alice Hamilton, speaking on industrial toxicology, reviews the important work that has been done in the United States during the last fifteen years. Dr. E. R. Baldwin, director of the E. L. Trudeau Foundation, Saranac, sets out the absolute and relative values of laboratory procedures in the diagnosis of tuberculosis, and refers to the charlatan "curing an incurable disease that did not exist." Dr. H. LoGrasso describes the treatment at Leysin, paying a tribute to "the father of heliotherapy," Dr. A. Rollier, and compares with it the practice at the J. N. Adam Memorial Hospital, Perrysburg, N.Y., where he works. Dr. J. Goldberger of the United States Public Health Service discusses the nature of the dietary deficiency responsible for pellagra, and Professor C. R. Stockard the relation to disease of type, which he defines as a fixed characteristic, and of constitution, which may change several times in the life of the individual. The volume closes with Sir Arthur Newsholme's account of William Farr, whom he calls "the father of vital statistics," just as Louis, who exerted a considerable influence on Farr, may be regarded as "the father of medical statistics."

Although described on the cover and in the advertisements as a textbook for students of agriculture and veterinary science, the scope of *The Physiology of Reproduction in the Cow*[9] is more aptly referred to in the preface as a reference book for advanced students and practitioners in agriculture and veterinary science—a very different thing. It contains a detailed account of all pertaining to reproduction in an animal which owes its supreme importance solely to that function. The author has based his studies on experimental animals, on organs collected from slaughterhouses, and on answers returned by experienced stockmen and others engaged in breeding cows, to questions addressed to them; in addition, he has examined the literature on the subject. His monograph falls into four parts: the breeding season and the age of puberty; the oestrous cycle, its periodicity and rhythm, its duration and the changes which occur; pregnancy and the alterations in the various organs; and sterility. These four divisions are extremely well illustrated in thirty-three excellent half-tone or coloured plates. A bibliography and a comprehensive index are provided, but unfortunately the former is arranged on the irritating numerical system instead of the more convenient alphabetical manner. This is corrected to a certain extent by a list of authors, but as the reference is only to the text it necessitates a double reference. The monograph is a mass of detailed information critically considered, and although knowledge of this subject is still far from complete, it is as comprehensive as present-day information can make it. It will be invaluable to all interested in reproduction, not only in the cow, but in all other animals.

[6] *Les Nouvelles Méthodes sur les Réactions colloïdales du Liquide céphalo-rachidien.* Par Eugène de Thurzo. Préface du Professeur Georges Guillain. Paris: N. Maloine. 1927. (Cr. 8vo, pp. 182; 24 figures, 3 plates. 30 fr.)

[7] *The Practice of Medicine.* By A. A. Stevens. Second edition, entirely reset. Philadelphia and London: W. B. Saunders Company. 1926. (Roy. 8vo, pp. 1174; 33 figures, 1 plate. 35s. net.)

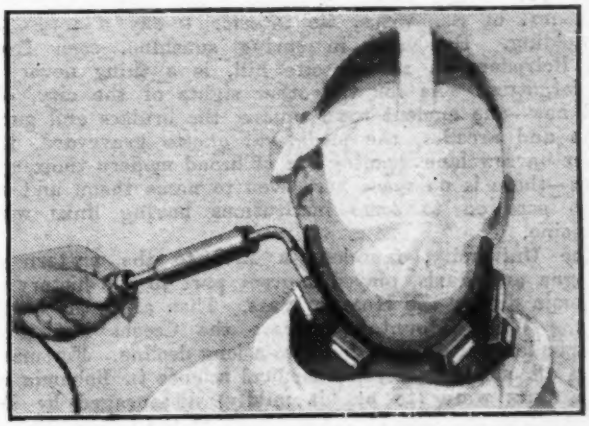
[8] *De Lamar Lectures, 1925-1926.* Baltimore: Williams and Wilkins Company; London: Baillière, Tindall and Cox. 1927. (Med. 8vo, pp. 220; 21 figures. 22s. 6d. net.)

[9] *The Physiology of Reproduction in the Cow.* By John Hammond, M.A. London: Cambridge University Press. 1927. (Sup. roy. 8vo, pp. xvi + 226; 33 plates. 21s. net.)

PREPARATIONS AND APPLIANCES.

An Electric-heated Radium Wax-knife.

MR. ARTHUR B. SMITH, M.B., F.R.C.S.Ed., and Dr. SYDNEY M. SMITH (London, W.), write: Radium when applied at a distance from the skin in inoperable and post-operative cancer, according to the principles of Regaud of Paris and other continental workers, is supported by means of wax moulds fitting over the part. The construction of these involves considerable manipulation, and the electric wax-knife has been designed to facilitate



this. Repeated heating of an ordinary wax-knife is both tedious and unsatisfactory. The wax-knife is kept constantly hot by means of an electrical resistance surrounding the upper part of the blade. The current (240 volts) is obtained from the ordinary room supply through an insulated wire with socket. The illustration shows the instrument in use. It can be obtained from the Medical Supply Association, 167, Gray's Inn Road, London, W.C.1.

THE SPAS OF CZECHOSLOVAKIA.

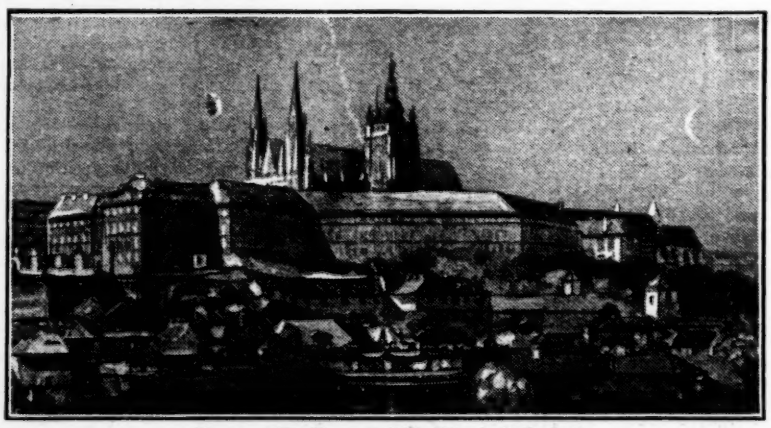
A MEDICAL VISIT TO PRAGUE.*

Prague: The Powder Tower.

PRAGUE, though not a spa, may fairly be counted a health resort if refreshment of the eye and spirit plays any part in healing. Once *Praha*, then for long *Prag*, and now again *Praha*, this remarkable city has been for a thousand years the hub of the political and intellectual life of the Czechs; and in its stones, as the phrase goes, may be read the history of a nation. Since the Treaty of Versailles the ancient capital of the Bohemian kingdom has been the capital of the group of central European States (Bohemia, Moravia, Slovakia, Silesia, and Ruthenia) known as the Republic of Czechoslovakia, founded on the ruins of the old Austro-Hungarian Empire.

Before 1919 the existence of a Czech nation, with a burning sense of nationality, was scarcely known to the people of the British Isles. It is still too little known here, although Czechoslovakia, with an area as large as England and Wales, has now some fourteen million inhabitants (of whom rather less than a quarter are German), and is an industrious, progressive, and interesting country, well worth a long visit.

Prague, one of the most enchanting mediaeval towns of Europe, has grown much since the nation gained its freedom, and its population must now be nearly 700,000. It lies in the middle of old Bohemia and forms a point of intersection for the railways between most of the capitals of Europe. Like Rome, it is a city built on hills and washed by a broad river; and the skyline of Prague, with its hundred spires, is incomparable. The dominant note is the stone pile of the great castle on Hradčany hill, for centuries the seat of Kings of Bohemia and now the official residence of the President of the Republic. Above the Castle rises the cathedral of St. Vitus, its interior to-day a forest of scaffolding. Hradčany in spring sunshine, seen from the Belvedere on an opposite hill, is a thing never to be forgotten. As for the other sights of the city, old and new—the ancient town square, the bridges and gateways and arcades, the mediaeval ghetto graveyard, the queer narrow lanes leading out of broad modern thoroughfares—there is no space here even to name them, and we must pass on to some institutions having links with medicine.



Prague: Hradčany and St. Vitus's Cathedral.

The University, founded in 1348 to the pattern of Bologna and Paris, played a great part in the history of Bohemia during the Hussite Wars. Then after the battle of the White Mountains, where the Czechs lost their independence in 1620, it fell into a long decline. For many years all efforts to develop medical science in Bohemia on large lines were (to put it mildly) discouraged by the Government at Vienna; but the work of the Czech Medical Society of Prague since 1860 has not been thrown away, and already there are signs of great progress in all branches of medicine and the ancillary sciences. The outstanding event in the half-century before the war was the re-establishment in 1882 of a purely Czech University with a medical faculty, and the founding beside it in the capital of a separate German university. The beginnings, however, were difficult, and much material had to be got together. Since the war the Czech or Charles University of Prague has regained its old standing, two new Czech universities have been founded (at Brno and at Bratislava), and one after another new professional and scientific societies have sprung up.† The numbers of medical students at Prague have been very large indeed in recent years, but, to the relief of the teachers and university officials, there is now some abatement of the flood.

While the medical profession of Czechoslovakia, and in particular their leaders and teachers, desire a national science of their own, they desire also to maintain and strengthen contact with the larger world of medicine outside; and, like so many of their race, they seem to turn instinctively towards our country. Many of them read and speak English, and, in Prague and the Spas at least, there are plenty of doctors with a good command of our language and a wish to know more of ourselves and our work. Such certainly was the conclusion reached by the party of British physicians who lately toured the health resorts of Czechoslovakia, and got to know something at first hand of its medical men and medical institutions.

During the short three days spent in Prague many courtesies were extended to the visitors. They were met on their arrival from Marienbad by representatives of the Czech Government, of the municipality, and of the medical world of the capital. On the following day a luxurious tramcar was put at their disposal for a tour of the city under the guidance of an official who evidently knew and loved the things he showed. They were most graciously received at the Town Hall by the Burgomaster and chief officials of the city, and in the evening were entertained to a banquet given in their honour at the Spolecensky Club by the Minister of Public Health and Physical Education. The Minister—a clerical statesman, the Rev. Jan Sramek—himself presided, and the British Chargé d'Affaires, Mr. C. E. S. Dodd, was present, together with officials of the Ministry and leaders of the medical profession in Prague.

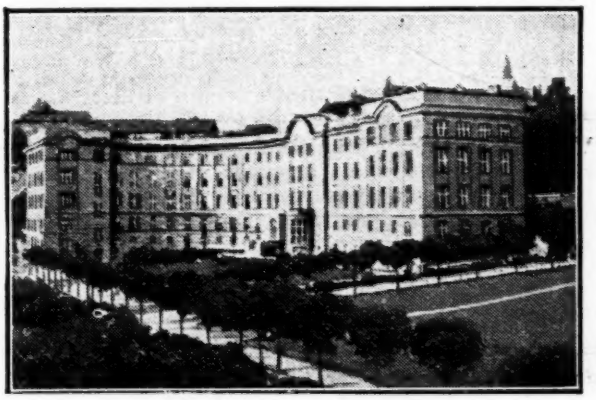
After the flying visit to Poděbrady, recorded below, an excursion was made on April 23rd to the sanatorium for paying patients at Prague, to the University Hospital, and to a few of the scientific departments of the University; a long afternoon ending with tea as the guests of Mr. and Mrs. Dodd at the British Legation, whose garden, under the shadow of Hradčany, offers exquisite views of the city.

The Prague Sanatorium for paying patients is on the river embankment towards the outskirts of the city, and a steep cliff rises behind. It is in many ways a remarkable institution, unlike anything in this country. All the departments—obstetrical, surgical, radiological, etc.—are self-contained, with operating theatres of the most modern type, and well equipped laboratories. The wards, large and small, are comfortable, and from many windows there are fine prospects over the river. Everything in this

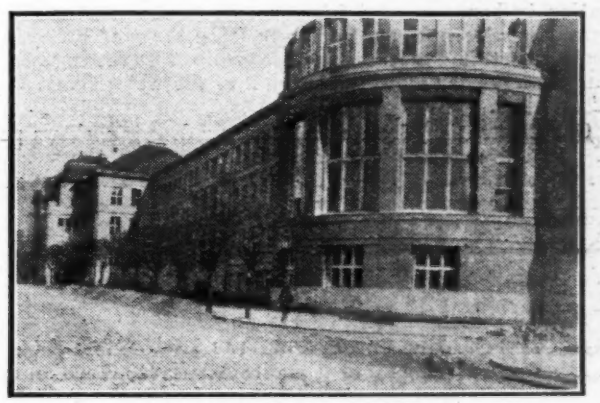
* An earlier note, on the spas of Western Bohemia, appeared in the BRITISH MEDICAL JOURNAL of May 14th, p. 885.

† See BRITISH MEDICAL JOURNAL, July 3rd, 1926, p. 28, The Renaissance of Medicine in Czecho-Slovakia, and February 26th, 1927, p. 396, Czecho-Slovak Medicine.

large building appears to have been well thought out. Features noted were the clinics for paying out-patients, and the café-like refreshment hall for visitors to the in-patients. The fees sounded moderate judged by English prices, and here it may perhaps be mentioned that the Czech crown is the unit of currency and that the present rate of exchange (163 kronen or thereabouts to the £) has moved scarcely at all in recent years. The medical tourists were shown over the institution by the medical superintendent and the matron, and the only criticism that occurred to them, here as elsewhere, was that for the time of year there was too much central heat and too little fresh air. The severity of the mid-European winter accounts for the double windows seen all over Czechoslovakia, and memories of its rigour may tend to keep these windows tight shut when spring comes round, even in temples of Hygeia.



Prague: Hlava Pathological Institute.

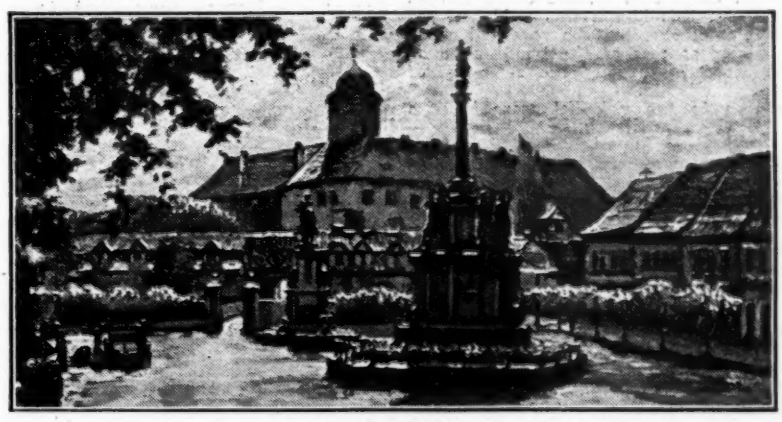


Prague: Embryological Institute.

The University Hospital at Prague, an old building with picturesque courtyards, is of special interest to British visitors familiar with the professorial units in some of the hospitals of London. Only a short visit could be made to one of the medical blocks, and (through no fault of his) Professor Prusik, the director of the Medical Clinic, was not there to do the honours. The wards, though the fabric is old, are modern-looking within and well equipped. Adjoining them is a large clinical theatre, and the visitors were struck with the full and precise case records filed above each patient's bed. They gathered that the work of this hospital, and that of the modern surgical and obstetrical clinics, forms an integral part of the training given in the medical faculty of the Czech University.

The Hlava Pathological Institute is a spacious building of the most modern kind. It stands on rising ground, in an open quarter of the city, near the Embryological Institute and several other scientific departments of the two Prague universities. The laboratories, lecture theatres, research rooms, and museum are excellent. Time only allowed a hurried glance with Dr. Kotynek as guide, but all were impressed with what they saw, and in particular with the really palatial "pathological dissecting room"—large, lofty, odourless, and as open to daylight as a conservatory.

One of the most striking features of the Prague Medical School of to-day (and by this we mean material, outward features only) is the Czech Embryological Institute, opened last year by the revered President of the Republic, Professor Tomas Masaryk, whose portrait hangs in a place of honour. This is a magnificent building, on a very large scale, and (at least to the casual visitor) it seems "the last word" in laboratory construction and equipment. The largest lecture-room—known as the Amphitheatre of Purkyně in memory of the great Czech physiologist we call Purkinje—will seat 330 students in comfort. The microscopical room occupies one floor of a large bay, whose lofty windows are seen on the right of the snapshot taken by Dr. V. G. Ward of West Byfleet, a member of the party. This laboratory, like everything else in the institute, is remarkable for the bold simplicity of its proportions and the perfection of its fittings; it accommodates 75 students working at three tiers of semicircular benches. Much space is set apart in the same wing for the culture of living tissues, a branch of research in which Dr. Vladimír Tuma (who showed the party round) has kept close touch with the work done at Cambridge by the late T. S. P. Strangeways and his colleagues. The Institute possesses also an ample radiographic department and a fine collection of transparent tissue specimens. Nothing, in short, has been stinted anywhere, and the lavishness of it all suggests that the Government and the Charles University agreed together that this, and the adjoining but as yet uncompleted building, should be the best of their kind without regard to cost. A medical school, however, is not to be judged by its classrooms alone, but by the spirit in which its work is done. At Prague, we believe, the imponderables are not valued below bricks and mortar.



Old Poděbrady.

THE BATHS OF PODĚBRADY.

Poděbrady, some thirty miles east of Prague, is a little town 600 feet above sea-level, in the broad flat basin of the Elbe. Its small bathing establishment, then known as "The Baths of the Prince of Hohenlohe," was bought in 1910 by the municipality, which sank a number of new wells and added to the buildings. In 1919 the enterprise was taken over by a company and further extensions followed. Thus the watering-place of twenty years ago, too insignificant for mention in Weber's *Climatotherapy and Balneotherapy*, has grown into a spa of some standing in a country of spas, and its nearness to the capital brings many visitors in search of health or recreation.

The baths are comfortable and well equipped. The water of fifteen springs is well charged with natural CO_2, and pleasant to take both within and without. It is bottled at the source, and great quantities go to all parts of the country. For a spa of this size the scientific equipment of the baths is very complete, and the physicians

take pride in their radiological apparatus, their electrocardiograph, and their careful case notes.

The medical party from England went there on the first spring day of their tour, when the early green on the trees gave a hint of the charm of Poděbrady in summer costume. This, with the genuine warmth of their welcome by the townspeople, and the glowing speeches they heard, makes April 22nd, 1927, stand out as a day by itself. Over a gateway in the ancient castle of the Bohemian hero, King George of Poděbrad, they were shown by their friend Dr. Driml two stone scutcheons epitomizing the story of a nation in bondage; and from Mr. Sustr, the pastor of the town, they learnt that Poděbrady, "the heart of Bohemia," feels something more than friendship for the people of our distant islands, whose entry into the war gave it hope of freedom.

Our illustration, from a water-colour drawing, shows part of the old market-place of Poděbrady, near the modern pump-room with its gay terraces and gardens, and the castle tower in the background.

(To be continued.)

THE HEALTH OF THE NAVY.

REPORT FOR THE YEAR 1924.

A CONSIDERABLE lapse of time continues to be the rule between the publication of the annual reports on the health of the navy and the year to which they refer. In this respect they contrast unfavourably with the reports on the health of the army and air force. The report for the year 1924, just issued, presents us with the health statistics of a total force of 87,620, and of its component parts in the different fleets and stations.

The ratio of admissions to the sick list for the total force was 486.24 per 1,000. This is somewhat higher than the ratio for 1923, but 56.15 lower than the average ratio of the three years 1921-23. The number constantly sick was 22.18 per 1,000, and the death rate 3.09. The death rate in the previous year was only 2.17 per 1,000, but the average for 1921-23 was slightly higher (3.11) than in 1924. Deaths were somewhat equally divided amongst diseases (1.78 per 1,000) and injuries (1.31 per 1,000 of strength).

Amongst the diseases causing admission, 759 are recorded as cases of cow-pox, of which 713 occurred in home stations, chiefly in the training establishments and depots. They represent men temporarily unfit for duty after vaccination. A table is given showing the numbers vaccinated or revaccinated with Government lymph and with lymph from other sources, with the corresponding successes and failures. Although revaccination successes are considerably less with lymph from other sources, the circumstances in which, and the stations where, this lymph was used are not mentioned, and the statistics cannot therefore be regarded as of much value in comparing the two sources of the lymph used in the navy, when it is remembered how easily the efficiency of lymph is affected by storage and climate.

The chief causes of admission to the sick list were injuries (7,637 cases), venereal diseases (7,172), diseases of the digestive system (6,665), of the respiratory system (6,398), and of the areolar tissue and skin (4,795). Amongst the infectious diseases influenza, with 2,407 cases, heads the list. Other infectious diseases and such semi-tropical diseases as dysentery, enteric fever, Mediterranean and sandfly fever, contribute comparatively few cases, although they do not show any marked increase or decrease as compared with the average for the previous three years. The bulk of the influenza cases occurred in the Home and Atlantic fleets, and we are told that the usual prophylactic measures, such as voluntary inoculation, avoidance of overcrowding, antiseptic throat spraying, disinfection of living spaces, attention to ventilation, and airing of bedding, were carried out. An outbreak of enteric fever is noted on the *Royal Sovereign*, but the number of cases is not stated, nor are we given other details beyond the statement that it was attributed by a court of inquiry to lettuces taken on board at Madeira contrary to the rules and regulations in force. In this respect the report as a whole is not illuminating, for it conveys little more than statistical statements and comparisons with 1923 and the average for 1921-23. We are given, for example, little or nothing as regards details of preventive measures. This is specially to be regretted, so far as venereal diseases are concerned, in view of the measures taken and recorded in the reports on the health of the British Army and on the health of the United States Army and Navy.

The report on invaliding is, however, more detailed. The number invalided, including men temporarily invalided from foreign stations, was 1,642, or 18.74 per 1,000. The number finally invalided from the service was 1,272, or 14.51 per 1,000—a decrease of 1.57 and 5.62 respectively on 1923 and the average of the previous three years. The chief causes of invaliding were sequelae of gonorrhoeal infection (209 cases), diseases of the eye (174), tuberculosis (166), and diseases of the ear (116). Thirty-one men were discharged the service for refusing surgical operations, chiefly for hernia, and for disease of the teeth and ears. A detailed table of each disease and injury causing invaliding, and the numbers invalided for each at different ages and years of service, is included in the report, but as the strength at each age and year of service is not recorded the figures do not indicate much that is of value statistically.

More than half the volume consists of statistical tables of individual diseases, showing numbers admitted, invalided, and died, with their ratios per 1,000 of strength in 1924 and the previous three years' average, both for the total force and for each of its component parts in the different fleets and stations. Other statistical tables included in the report show the complements of each ship in the Royal Navy, according to station and period in the station, the number of cases of sickness and injuries on each, and the number sent to hospitals on shore. Statistical tables are also given showing the health statistics of the Royal Marines headquarters, of boys and youths in the training establishments, of officers and men in the Royal Navy depots, and of dockyard establishments and Royal Marine divisions. There are also tables of cases admitted to the R.N. Mental Hospital at Great Yarmouth and other R.N. hospitals at home and abroad.

Valuable as these statistical records are for comparing the health of the navy in one year with another or with a period of years, we feel confident that something more than a bare statistical statement of the principal diseases—something, that is to say, similar to what we have been accustomed to in recent reports on the health of the army—would add greatly to the medical and public interest of the annual report on the health of the Royal Navy.

[1] *Statistical Report of the Health of the Navy for the Year 1924.* London: H.M. Stationery Office. 1927. (8vo, pp. v + 127. Price 4s. 6d. net.)

Nova et Vetera.

AN ACTION FOR DAMAGES FOR MALPRAXIS.

THE following entry, relating to an action for damages against a surgeon, appears among the early Chancery proceedings (undated, *circ.* 1435) in *Select Cases in Chancery*, edited for the Selden Society by William Paley Baildon (1896):

> "To the most gracious lord, the Chancellor of England, Humbley beseecheth your poor orator, Ralph Fryday, that whereas the suppliant's right arm was broken through certain evil-doers, who lay in wait to kill him, which arm, one John West of Leicester undertook at Wigston well and duly to cure and save; which John set about his cure of the said arm so improperly, through the malice and covin of the enemies of the said suppliant, that the arm mortified and became incurable, to the perpetual destruction of the said suppliant: May it please your most gracious Lordship to grant the said suppliant a writ directed to the said John West (commanding him) to appear before you in the Chancery on the octave of the Purification of our Lady under pain of £40 to be examined by the surgeons of our Lord the King, and by other efficient surgeons, as to that cure not duly performed, and also to answer to the said suppliant for this great injury, as right and reason demand, for God and in the way of charity. Considering, most gracious Lord, that the said suppliant cannot have execution nor any remedy at (common) law for this misdeed so done by colour of the cure, if he be not aided in this way, because of the great maintenance against the said suppliant in those parts."

The original is in French. The editor in his introduction says: The singular case against the surgeon is chiefly interesting from the fact that the plaintiff asks for the King's surgeons and other sufficient surgeons to be called as expert witnesses. Apparently both trespass and assumpsit lay at common law in such cases. A case in 1443 was one of a broken leg, which the defendant, described as a "leche," had undertaken to cure in consideration of 40s. The leg mortified, in consequence of the surgeon's neglect according to the plaintiff, or because of the patient's wilful disregard of directions according to the defendant. The case went to a jury, but the judgement has not been found.

Another case of a similar nature, between 1492 and 1500, will be found in the Calendar (cxxiv). The plaintiff is a surgeon. The defendant's child was "diseased in the ei wt a pynne and a webbe"; he requested the plaintiff to cure it. The plaintiff undertook to do so if the defendant would see that the child did not touch or rub it; this was not done, and the plaintiff was unable to save the eye. The defendant thereupon brought an action of trespass before the Sheriffs of London. The plaintiff prays for a certiorari.

British Medical Journal.

SATURDAY, MAY 28TH, 1927.

THE DETERMINATION OF SEX.

UNTIL not very long ago it was generally understood that at the time of fertilization the egg was completely ambivalent as regards the future sex-organization of the resulting individual, and it was customary to refer the sex of an organism to the conditions incident to development. But certain facts of general biology are now established which are not susceptible to interpretation of this kind: they point directly to the conclusion that sex in the higher animals is determined at the time of fertilization by the precise workings of an orderly mechanism. It is established that identical twins, derived from one and the same ovum, are always of the same sex and remarkably alike, whereas fraternal twins, having their origin in two separate ova, may or may not be of the same sex, and are no more alike than are brothers and sisters born at different times. There is no appreciable reason why, if purely environmental factors are at work in deciding the sex of offspring, identical twins should be of the same sex, whilst fraternal twins should include both male and female. The evidence of twinning points to the conclusion that the sex of the future individual is determined at the time of fertilization by the constitution of the fertilized egg.

The mode of transmission from generation to generation of certain characters (details of structure or of function) is such as very strongly to suggest that the mechanism by which they are distributed is either the same as, or else is closely associated with, that by which sex itself is determined. Such characters are known as sex-linked, and of these haemophilia, as exhibited by most cases, is an excellent example. The observed facts concerning the transmission of haemophilia can only be interpreted if certain assumptions are made. The first is that sex in man is decided by the simplex or duplex condition of a component of some mechanism which, being present in duplicate, leads to the establishment of femaleness, and that upon this component are the antecedent determiners of the sex-linked characters. If search is next made for this sex-determining mechanism it is found in man that structural and physiological differences which distinguish the sexes are associated with constant differences in the chromosome content of the component cells of the two sexes. Man has twenty-four pairs of homologous chromosomes. In the somatic cells and immature gametes of the male one of the twenty-four pairs (the allosome) is remarkable in that its constituent members are morphologically dissimilar, whereas in the female the members of this pair are, as is the case in all other pairs in both male and female, morphologically alike (autosomes). Since tissues from male and female differ chromosomally only in this respect, these chromosomes are referred to as the sex-chromosomes. The members of the sex-chromosome pair in the female and the one sex-chromosome in the male which is morphologically similar to these are known as the X-chromosomes, while the unequal mate of the X-chromosome in the male is known as the Y-chromosome. The chromosome constitution of the male is 23 pairs of autosomes +XY; that of the female is 23+XX. Into each ripe gamete there passes one or other of each pair of homologous chromosomes. All ova, therefore, will be alike in the matter of chromosome constitution, twenty-four single chromosomes, of which one is an X; of the spermatozoa, however, there will be two kinds, according to whether they contain 23+X or 23+Y. As far as the chromosome content of the gametes is concerned, the human female is monogametic, the male digametic. When ovum meets sperm in fertilization each gamete will convey into the zygote one member of each pair of homologous chromosomes, and the specific number will be restored; but there will be two kinds of zygote—one which received an X-chromosome by way of the sperm, and the other which received a Y-chromosome. The first will have the chromosome constitution typical of a female, 23 pairs of autosomes +XX; the second that characteristic of the male, 23+XY.

If the antecedent determiners (the factors or genes) of sex-linked hereditary characters are borne in the X-chromosome, but not in the Y—and this suggestion is not extravagant, since in many of the domesticated animals there is no Y, the female being XX, the male XO—then the peculiar and significant mode of transmission of these characters is explained. Sex-linked characters are associated with the sex-determining mechanism (the XX-XY sex-chromosome mechanism), because their factors are located in the X-chromosome. This cytological difference between the two kinds of spermatozoa is reflected in a sperm dimorphism, estimated by measuring the head length. It has been found in a considerable number of species that there are two intergrading size classes, and it is assumed that the individuals of the larger class are those spermatozoa which carry the X-chromosome. This sex-chromosome sex-determining mechanism is such that, if the X-bearing spermatozoa are produced in equal numbers and are equally capable of fertilizing the ovum, then equal numbers of males and females will be conceived. By its working, sex is determined at the time of fertilization. The suggestion that femaleness is decided by the presence of the X-chromosome in duplicate, whereas maleness is determined by a single X, is but an essay in convenient symbolism. It is, however, reasonable to assume that the effective factor in the establishment of maleness or of femaleness is the ratio of X-chromosomes to autosomes. It is helpful to assume that in the X-chromosomes are female-determining factors which elaborate enzyme-like "gynase," and that on the autosomes there are male-determining factors elaborating "andrase," and that the sexuality of the zygote is determined by the balance between these. If A be taken to represent one complete set (haploid) of autosomes, then the relationship of sex-chromosomes to autosomes in the male can be symbolized as 1X:2A, whereas in the female it is 1X:1A. As the result of this interaction of male and female determining factors, elaborating their andrase and gynase respectively, it can be assumed that there becomes established one of two physiological states (metabolic levels) in the fertilized egg. In the 1X:2A type there is an internal environment of "maleness"; in the 1X:1A type one of femaleness; and in one or the other, as the case may be, organogeny and ontogeny proceed.

It is assumed from the results of experiment that the relative rates of production of the male and female differentiating substances elaborated by these sex-determining factors are not constant throughout life, that at one time one may be in efficient excess, and

at another the other. In the normal male the male-differentiating reactions are in efficient excess throughout the whole period of differentiation, but intersexuality occurs when during the course of differentiation of an individual of either sex, XX or XY, the male-differentiating reactions overtake and supplant the female-differentiating reactions, or the female the male. A male is a male because in his beginning he was a genetic male (XY), because in this XY zygote the relation of sex-chromosomes to autosomes, 1X:2A, was such that an internal environment of maleness became established and persisted throughout the phase of differentiation, because in this environment the structures concerned in the sexual organization, also being genetically male, flourished, and because, as the gonads became differentiated, their internal secretions reinforced the initial maleness of the internal environment, and so directed the further development of the structures of the sex-equipment that, in the end, the individual became a functional male. "A female is a female by the totality of her internal secretions" remains true only if it be granted that the phrase "internal secretion" shall include the metabolic products of her initial sex-determining hereditary factor complex.

It will be noted that according to this chromosome theory of sex-determination (which is now generally accepted) the male, in the case of mankind, is the digametic sex, elaborating in respect of the elements of the sex-determining mechanism two kinds of sperm, the one which, when it fertilizes any egg, will yield males, and the other which will give females. It is not surprising, therefore, that the hypothesis, originally promulgated by Hippocrates and recently adumbrated by a cloud of witnesses, which postulates that it is the female who is digametic, meets with little support from present-day biologists. The variations of this hypothesis which are now advocated as leading to the control of sex, and which require that there shall be a difference in the kinds of ova elaborated by the right and left ovaries, are not such as can be brought into harmony with established scientific facts, and therefore cannot be accepted on the present evidence. They are supported by a collection of selected statistical data applied without statistical treatment; those cases which do not fit into the scheme are airily dismissed, while the great body of established facts which supports this chromosome theory and cannot support the others is neglected. This is not the attitude of the scientific mind.

The fact that there are the two forms of spermatozoa permits it to be postulated that if these are not elaborated in equal numbers, or if chemical or mechanical hindrances to their vitality or motility exist in the female passages so that one form is more severely handicapped in its race towards the ovum than the other, there will result a conceptional ratio of significant inequality. Recent work in this field has revealed a considerable amount of evidence which seems to show that the primary sex-ratio is far removed from equality, that under the usual conditions the X-bearing sperm is not nearly so efficient a fertilizing agent as is the Y-bearing, and that it is the high pre-natal death rate among the less viable XY zygotes that yields a secondary sex-ratio (at birth) of equality. There is good reason for the belief that an increase in our knowledge of the chemistry of the secretions of the female passages and of the effects of chemical and physical agencies upon the viability and motility of the sperm, may make it possible, to a greater or lesser extent, to control the sex of the offspring. Whether the use of this power would be to the benefit of mankind is a matter which need not now be discussed; but it would seem to be desirable that such power should be added to the armamentarium of the physician, who must be trusted to use it with discretion.

PERITONEAL ADHESIONS.

PERITONEAL adhesions, particularly those which recur in spite of operations, are a subject of anxiety to all concerned, and it is therefore interesting to gather the conclusions of Drs. F. Trémolières, physician, L. Joulia, radiologist, and H. R. Olivier, intern, of the Boucicaut Hospital, Paris, who have made a systematic investigation of abdominal perivisceral adhesions,[1] relying on radiology as the only means of localizing their position. It has commonly been assumed that these adhesions are secondary to some lesion of the intra-abdominal contents, but the authors accept the view that some cases are primary and independent of any change in the viscera, and hold that the most likely cause is either tuberculosis or syphilis. They admit that this is difficult to prove, but state that the obstinately relapsing cases and those prone to develop adhesions after laparotomy are often the subjects of congenital syphilis. Malaria, influenza, and acute rheumatism may also possibly set up these adhesions. For the secondary forms of adhesions four causes are given: inflammatory or infective, traumatic, congenital, and mechanical. Injury may act by causing a haematoma or by activating latent infection; post-operative adhesions, of course, come in this category. The congenital group includes Jackson's membrane, and here abnormal development rather than foetal peritonitis seems to be the important factor. The mechanical origin advanced by Sir Arbuthnot Lane is cautiously dismissed by the statement that, while unable to bring forward any arguments against it, they cannot find any clinical or experimental evidence in its support. In the section on morbid anatomy the various segments of the alimentary canal from the stomach to the sigmoid colon are considered in order. Investigation of the little known subject of the histology of peritoneal adhesions shows that there is under the endothelial layer, which is destroyed in places, fully developed connective tissue rich in collagen and poor in fixed cells; and that there may be foci of subacute inflammation and infiltration with lymphocytes and plasma cells. The omentum shows the same changes, with in addition atrophy of the fat cells and elastic tissue. Jackson's membrane and Lane's band show normal endothelium and blood vessels, and well formed fibrous tissue free from infiltration by lymphocytes.

The clinical symptoms vary according to the position of the adhesions and of the resulting or causal visceral lesions; they are described under six heads. Those caused by gastro-duodenal lesions usually imitate peptic ulcer, but sometimes gastro-colic ptosis. The typhlo-colic form, or painful dilatation of the caecum, often follows appendicectomy attended by only temporary improvement; it simulates chronic appendicitis with constipation—false appendicitis. In the entero-colic form there is diffuse colic with constipation; biliary pain may be due to pericolitis associated with cholelithiasis (true lithiatic), or to perivisceritis without any lesion of the gall bladder (the false form of lithiasis). The pseudo-neoplastic category includes two.

[1] *Rev. de méd.*, Paris, 1926, 701-737.

forms. One is the rare inflammatory tumours in the right iliac fossa, which occur chiefly in old persons, and, in the absence of evidence of tuberculosis and syphilis, suggest carcinoma; the other form is the relatively common chronic sigmoido-perisigmoiditis which has often led to a diagnosis of carcinoma. In the obstructive form adhesions long latent may suddenly cause acute obstruction. The radiological appearances are fully described, and this part of the essay is illustrated by a number of skiagrams. The treatment may be medical or surgical; the former includes the administration of castor oil in small doses, or of paraffin; diathermy may be useful, as also sour milk and a milk and vegetable diet. Surgical treatment should aim above all at prevention, such as excision of any inflamed areas in the omentum; in long-standing cases demanding operation, during which adhesions are divided, the exposed surfaces thus produced should be covered by grafts from the omentum, which, contrary to what might be expected, are not likely to lead to the formation of fresh adhesions. Any focus, such as an inflamed appendix, should of course be removed at the same time; but it is frankly admitted that in spite of these forms of treatment failures are not uncommon.

THE ANNUAL MEETING IN EDINBURGH.

THE date of the Annual Meeting of the British Medical Association in Edinburgh is rapidly approaching; there are now left only six clear weeks before the assembly of the Representative Meeting, which is fixed for July 15th —St. Swithin's Day, though we may hope only for a flood of eloquence, since Edinburgh can be very charming when the sun shines. Sir Robert Philip will give his address as President on the evening of Tuesday, July 19th, and the meetings of Sections will begin on the following day. There are twenty-one Sections, ranging from Medicine to the History of Medicine and Medical Sociology, so that however large the attendance there ought to be plenty to occupy and interest every member. It is fully anticipated that the numbers present will be large, for Edinburgh is one of the famous medical schools, and will undoubtedly attract many of its graduates; in fact, the attendance is expected to be so large that some apprehension is felt with regard to the capacity of Edinburgh to put up all its guests. The Hotels and Lodgings Committee has definitely engaged all the available rooms in the city and will allocate them in rotation. The Scottish Medical Secretary, Dr. Drever, has undertaken to do this, and applications for rooms should be addressed to him at the Edinburgh House of the Association, 6, Drumsheugh Gardens. A form of application was, for the convenience of members, printed in the advertisement pages of our issue of last week (p. 28). The accommodation is grouped into three classes—hotels, where the tariff for bed and breakfast ranges between 8s. 6d. and 14s., private hotels and boarding houses (5s. 6d. to 8s. 6d.), and hotels (8s.), which, though few in number, can all be recommended. Naturally the committee is anxious to get an estimate of how many members it is to expect, and earnestly desires that applications for rooms should be made at once. The railway companies serving Edinburgh have agreed to issue passenger tickets to that city available from July 13th to 25th, at the ordinary single fare and one-third for the double journey. The printed form, which can be obtained from the Financial Secretary of the Association, Tavistock Square, W.C.1, must be filled up and signed by the applicant and given in at the booking office where the ticket is bought. The concessions as to fares will operate from Irish ports by railway-owned steamers, and by the boats of the Belfast Steamship, British and Irish Steam Packet, the City of Cork Steam Packet Companies, and the boats of Messrs. Burns and Laird. For those who propose to motor to Edinburgh garage accommodation for at least 1,125 cars will be available; application in this case also should be made to Dr. Drever. The Pathological Museum, which is now a regular feature of the Annual Meeting, has been brought together by a committee of which Professor J. Lorrain Smith is chairman; an extensive series of demonstrations will be given, of which a list will be found in the SUPPLEMENT of May 7th (p. 193). It is hoped that those who contribute to the Museum, and particularly those who wish to supplement by exhibits their contributions to the Sections, will be present at stated times to demonstrate their specimens. Communications on this matter should be addressed either to Dr. James Davidson at the Department of Pathology, The University, Edinburgh; Mr. W. Q. Wood (48, Northumberland Street, Edinburgh), or to Dr. Douglas Miller (57, Manor Place, Edinburgh), who are secretaries of the committee. The Lister centenary celebration will be held in the McEwan Hall of the University on Wednesday, July 20th, at 8 p.m. The Earl of Balfour, Chancellor of the University, will preside, and short addresses will be given by Sir William Watson Cheyne, Professor Tuffier of Paris, Professor Harvey Cushing of Harvard, and Professor John Stewart of Halifax, Nova Scotia. Throughout the week of the meeting of the Association a museum of Lister's relics, gathered from many sources, will be on view in the Upper Library of the old University. A Lister Memorial Volume has been prepared and will constitute the Book of the Edinburgh Meeting of the Association. A copy will be presented to each member of the Association on registration. The volume is edited by Dr. Logan Turner, and will contain sketches and reminiscences by former house-surgeons of Lord Lister's, two of his own scientific addresses, and a series of letters. There will also be a section dealing with the lives of Lister's fellow residents in the Edinburgh Royal Infirmary during the summer of 1854. Sir Edward Sharpey-Schafer has contributed a sketch of Lister's work as a physiologist; Mr. Miles writes on surgery before Lister, and Professor John Fraser on the influence of Lister's work on surgery. On Saturday, July 23rd, a limited party will make an excursion by special train to Fife and St. Andrews, and will be entertained at luncheon at St. Andrews by the Fife Branch; on Sunday, July 17th, there will be an excursion by road for the Representatives and their friends to the Scott country.

PINEL AND VULPIAN.

As we announced on April 9th, the celebration of the centenary of the death of Pinel, organized by the Société Médico Psychologique, is being held at Paris, from May 27th to June 2nd, simultaneously with the celebration of the birth of Vulpian under the auspices of the Société de Biologie and the Société de Neurologie. Among the psychiatrists and neurologists from many countries who will take part in the celebrations are not a few from Great Britain; the British Medical Association is represented by Dr. C. Hubert Bond, Commissioner of the Board of Control. Both Pinel and Vulpian were attached to the Salpêtrière Hospital in Paris, where celebrations will be held as well as at the Sorbonne and the Faculty of Medicine. Philippe Pinel, who was born in 1745, and died at the ripe age of 81 in 1826, is best known in this country and to the world generally for being the first to introduce humane treatment for the insane; his example was followed in England by Gardner Hill at Lincoln Asylum, and John Conolly at Hanwell. Pinel first intended to adopt a theological career, and it was not until the age of 30

that he obtained his medical qualification. His previous literary and philosophic studies, however, had not been in vain, since they enabled him to take a wider outlook than might otherwise have been the case. Shortly after obtaining his degree he translated into French William Cullen's work on nosology, which at the time had an extensive vogue. During his life, and for many years subsequently, Pinel's fame rested less on the revolution he effected in the treatment of the insane than on his being the founder of a new system of nosology in which he sought to classify diseases by their symptoms, and not by their morbid anatomy. As Pinel may be regarded as one of the pioneers of modern psychiatry, so Vulpian may be ranked with his friend and contemporary Charcot as one of the pioneers of modern neurology. Vulpian was born in Paris in 1826, and graduated in 1853 with a thesis on the origin of several cranial nerves. After acting as assistant to Flourens, who was professor of physiology at the Museum of the Jardin des Plantes, he was appointed professor of morbid anatomy at the Faculty of Medicine in 1867, and held the post until 1872, when he succeeded Brown-Séquard in the chair of comparative and experimental pathology. He was dean of the faculty of medicine from 1875 to 1881, and, during his term of office, was the active spirit in bringing about several reforms in the medical school, including the installation of new laboratories and the creation of more professorships. In addition to being a member of the Académie de Médecine and later of the Institut de France, he was made perpetual secretary of the Académie des Sciences, thus receiving one of the highest honours to which a French savant can aspire, and being the first medical occupant of this post. Like his predecessors Cruveilhier, Laennec, Louis, and Bretonneau, Vulpian combined a keen clinical instinct with a study of morbid anatomy, but he surpassed them by being the first to realize the importance of the microscope in pathology, especially in diseases of the nervous system, as is shown by his classical work on infantile paralysis, disseminated sclerosis, tabes, paralysis agitans, and changes in the muscles following section of the nerves.

COLOSTOMY.

TRADITIONAL beliefs die as lingering a death in medicine and surgery as in all else, and the operation of colostomy affords an excellent example of the way in which a method of treatment may be pursued by a bad character acquired in its early and experimental stages. To avoid the then dangers of opening the peritoneal cavity the early colostomy openings were made in the lumbar region, and the lot of the unhappy patient was indeed lamentable, for in general the opening was little more than a lateral window in the bowel, and not only was drainage inefficient, but it was also uncontrollable. Many of these unhappy patients were in consequence almost cut off from all forms of social or other activity, and when it is remembered that the operation was usually performed for the relief of the last stages of cancer of the rectum, it is not difficult to realize how colostomy came to be regarded by all concerned. Any operation carried out upon a patient who, in any event, is certain to die—no matter how successful it may be in its immediate object—is not likely greatly to enhance the reputation of the surgeon or of the art of surgery; and when that operation was characterized by the distressing concomitants inseparable from the earlier type of colostomy, it is not surprising that it acquired a very bad name indeed. Happily the rise of abdominal surgery and the introduction of sigmoid colostomy wrought a great change. The operation proved safe and easy, and the more conveniently situated wound allowed an adequate and complete emptying of the bowel. It was soon apparent that a patient with colostomy could lead a decent and fairly useful life, but it was of course still only a palliative, for the patients were all doomed as the growth extended. The next stage was the introduction of methods of complete removal of the rectum followed by permanent colostomy, and for the first time a new problem presented itself—patients cured of cancer of the rectum, but saddled with an artificial anus for life. It is in these cases, some of them strong, vigorous, and busy people, that the function and behaviour of the new opening is of supreme importance. How far colostomy has advanced and how high a degree of efficiency and control can now be promised was made very evident at the annual meeting of the Subsection of Proctology of the Royal Society of Medicine, held on May 11th, when its technique, its indications, and the after-care of colostomy cases were all exhaustively considered. Mr. Ernest Miles and Mr. Gabriel opened the discussion by describing the methods employed at the Cancer Hospital and St. Mark's Hospital respectively. It appears that in general the staff of St. Mark's use an incision through the rectus muscle and claim for it a higher degree of control than can be obtained by the incision in the iliac fossa favoured by Mr. Miles and his supporters. While it is true that in weight of numbers the St. Mark's method received more support, Mr. Miles's great experience and wise judgement cannot on that score alone be disregarded. Possibly the truth of the matter lies not so much in the site of the operation as in the mode of its performance, for all speakers were agreed that the really fundamental factor is the formation of a good spur. Given a well placed opening, a satisfactory spur, and a reasonably intelligent patient, a busy, active, and not unpleasant life is possible. The labourer can earn his living, the mother can look after her children, and the professional man can pursue his usual avocation. Indeed, dancing and dining out would appear to be not impossible. One speaker went so far as to claim that the subjects of colostomy were in some respects better off than their fellows on the ground that the daily evacuation of the bowels through the new stoma is so complete as entirely to remove any of the usual symptoms of auto-intoxication, and confers upon them notably clean tongues, sweet breath, and clear complexions. Despite all that may be said to the contrary, most people will agree that no matter how well these patients may feel, and be their breath never so sweet, yet the fact remains that no man or woman familiar with the circumstances would willingly accept colostomy did not death itself weight the balance of decision. But with death imminent or remote as an alternative it becomes a small price to pay for even temporary deliverance, a price that most of us would pay without demur. It is a comforting reflection that when we do have to advise colostomy and can combine with it an effective removal of the growth, we are offering a good chance of cure as some set-off against the disability.

THE PROBLEM OF THE DIPHTHERIA CARRIER.

THE long-continued isolation which is sometimes necessary in the case of diphtheria carriers, whether convalescent patients or contacts, is frequently a source of annoyance both to the medical practitioner and to the luckless individual whose liberty is restricted. Morphological examination of throat swabs seems to have been rather inspired hitherto by the saying of the Bellman in Lewis Carroll's *Hunting of the Snark*: "What I tell you three times is true," three successive negative results being required for liberation of the prisoner. Although there is a good deal of evidence that the virulence of diphtheria bacilli is relatively constant, and that apparent changes of virulence in consecutive subcultures are actually due to the association of a virulent with an avirulent strain, yet there

remains the possibility that the predominance of one or other type at the time of testing might lead to an erroneous conclusion as to infectivity. Margaret Beattie and Mary Dart[1] have therefore made an examination of the criteria at present employed in determining the release of such carriers. The questions they considered were: (1) Is a single negative virulence test sufficient to allow of the release of a carrier? (2) Is a person who has once been shown to be carrying virulent diphtheria bacilli to be considered dangerous so long as diphtheria bacilli are present? To answer these questions they performed repeated tests on bacillary strains recovered from a number of contacts and carriers. Whole cultures were injected intracutaneously in 0.2 c.cm. quantities into guinea-pigs, half of which were protected by a simultaneous dose of antitoxin. Of 47 carriers tested, 11 gave persistently negative results of virulence tests. Of the others, 32 gave positive results the first time, and 4 gave negative results the first time but positive results on one or more subsequent occasions. Of the 32 patients that gave a positive virulence test on the first occasion, 7 subsequently became negative—that is to say, 21.9 per cent. of patients giving an initial positive virulence test subsequently became negative, whereas of those giving an initial negative test 26.7 per cent. subsequently became positive. Since in over half the patients only two tests were made, it is clear that these figures cannot be considered as representing the true proportion of alterations in virulence; had a larger number of tests been made it is probable that they would have been different. (The figures given are those in the tables; the figures in the text do not agree with these absolutely.) The conclusion to be drawn from these results would seem to be that from an administrative point of view repeated virulence tests are of value, not only in enabling certain carriers to be released before morphological diphtheria bacilli have disappeared from the throat, but also in preventing the premature discharge of carriers who, on a single test, might be considered innocuous.

[1] *American Journal of Hygiene*, March, 1927, p. 105.

BENZOIC ACID IN THE PRESERVATION OF FOODS.

UNDER the provisions of the Public Health (Preservatives, etc., in Food) Regulations which came into force on January 1st last, the only preservatives permitted to be used in foods and drinks are sulphurous acid and benzoic acid. The articles to which the preservatives may be added, and the maximum quantity allowable, are specified in a schedule. Unfortunately little work has been done in this country on the estimation of benzoic acid, so that the Ministry of Health has thought it advisable to publish a review of available information on the subject in the form of a report on *The Determination of Benzoic Acid in Foodstuffs*,[2] by Dr. G. W. Monier-Williams. The difficulty of the subject is illustrated by the story of a vendor of pickles in America who was prosecuted on the ground that his product contained benzoic acid. As a matter of fact his pickles were highly flavoured with oil of cinnamon, which gives similar reactions. Moreover, benzoic acid occurs naturally in certain berries, such as cranberries, whortleberries, and especially cowberries, which are common articles of food. Dr. Monier-Williams finds that for the determination of benzoic acid in foodstuffs removal or destruction of proteins is almost always necessary, as they are liable to cause emulsions on extraction with solvents, and also to retain benzoic acid. At the same time the removal of proteins by precipitation may lead to loss of benzoic acid in various ways. With foods containing much fat it is better to separate the fat and to extract the benzoic acid independently from the fat and from the fat-free residue. Steam distillation is a satisfactory method of extracting the acid from non-fatty foods. In nearly all cases purification of the extract is required before titration or weighing can be done. Washing with salt solution is a good way of purifying; and oxidation with alkaline permanganate is effective in removing many impurities. Precipitation of insoluble benzoates is only of limited application; while sublimation, the best and most reliable method of purification, may fail if much impurity is present. The most delicate test for benzoic acid is Mohler's. Dr. Monier-Williams concludes his report by describing a new method of distillation for the determination of benzoic acid in fruit and vegetable products.

[2] H.M. Stationery Office, or through any bookseller. Price 1s. net.

THE STUDENT WHO SMOKES.

ACCORDING to a venerable anecdote, two men followed one another into a public house one spring day and each ordered a brandy and soda, the first because the cold wind tried him, the second because the hot sun made him feel faint. A third man, who had heard both orders given, said to the barmaid: "Bring me a large brandy and soda, miss, because I like it." It is probable that a majority of adult smokers would, if quite honest with themselves, assign the third man's reason for their habit, and it is really a very good reason. Still, as Professor Boycott says in his preface to Dr. Earp's study of *The Student Who Smokes*,[1] "we have been smoking in this country for about 350 years, and it is no doubt time that we knew more about the effects than we do." Dr. Earp, who is the director of the Department of Hygiene in Antioch College, Yellow Springs, Ohio, set himself to investigate some of the effects of smoking upon a sample of young men. He has analysed statistically the physical and mental prowess of college undergraduates who were or were not smokers. The data relating to athletics are not, from the nature of the case, very extensive, but, so far as they go, confirm the general impression that habitual smoking is not favourable to the development of athletic prowess. The data relating to intellectual activity are novel and interesting. In the first place, the results of psychological tests at or before admission show no significant difference between smokers and non-smokers to the prejudice of the former; in fact, in one series of tests the smokers had a statistically significant advantage. But if one takes the frequency distributions of marks gained in college, the smokers had a lower average and were more variable. Taking a grade of 4.0 as a mark of reasonably high scholarship, it appears that 23.9 per cent. of the non-smokers and only 7.9 per cent. of the smokers reached or exceeded this mark. On the other hand 37.9 per cent. of smokers failed to reach an average grade and only 18.8 per cent. of non-smokers. It also appears that the heavy smokers did not do so well as the light smokers. Thus 41.4 per cent. of 353 students failed to reach diploma standard, 62.7 per cent. of 75 heavy smokers, 42.1 per cent. of 95 lighter smokers, 31.8 per cent. of 176 non-smokers. There is also some evidence that the smokers deteriorated slightly from year to year, and some evidence that inhalers did worse than non-inhalers (we think that, in the latter case, the method of treating the statistics has somewhat over-estimated the significance of the difference, but the point is technical). On the whole, then, the smokers come out of the trial rather badly, and Dr. Earp asks himself why. He considers three hypotheses. The first that smoking is, to some extent, a measure of sociability, and that sociable lads have less time to ponder in solitude over the properties of right-angled triangles and the uses

[1] *The Student Who Smokes: An Original Statistical Investigation.* By J. Rosslyn Earp, M.A., M.R.C.S., L.R.C.P., Dr.P.H. With a preface by A. E. Boycott, M.A., D.M., F.R.S. London: H. K. Lewis and Co., Ltd. 1927. (Med. 8vo, pp. 62. 5s. net.)

of the subjunctive mood. The second theory is that those who smoke are happy and content and do not feel the cravings of an ambition to know all about triangles; as Emerson puts it, "The believing we do something when we do nothing is the first illusion of tobacco." The third theory is that some poison or poisons in the smoke act directly upon the central nervous system. Dr. Earp slightly inclines to favour the third theory—he attaches more importance than we are inclined to do to his comparison of inhalers with non-inhalers—but his summing up is judicial, and he concludes that "more than one, perhaps more than all, of the explanations ventured above are necessary to cover all the facts." This is an interesting piece of work which should be repeated elsewhere for a reason mentioned by Dr. Earp in another connexion. As he says, "in some environments the non-smoker is made to feel socially an outsider, and in others the smoker is consciously wicked." If we wish to determine the intrinsic virtues or vices of tobacco we ought to take a sample of persons from a "universe" where smoking is regarded from the moral and social point of view with complete indifference, and so we should avoid the risk of some other factor correlated with the use of or abstention from tobacco complicating the matter. There is not, indeed, any evidence that the "universe" sampled by Dr. Earp is other than indifferent; the facts (1) that in his sample there were as many smokers as non-smokers, (2) that the sets of questions issued failed in a large proportion of cases to elicit strong reasons for or against smoking, rather suggest that the population from which the students are drawn has no very strong pro- or anti-nicotine opinions. Still, the point is so important that it ought to be tested in many ways, and we share Professor Boycott's hope that Dr. Earp's work will stimulate others.

ANTHROPOLOGY AND MAGIC.

MANY members of the Royal Anthropological Institute visited the Wellcome Historical Medical Museum on May 24th to hear an address on the anthropological sections of the museum by Professor Elliot Smith, F.R.S. Very many of the objects, he said, represented the strivings of men to protect themselves, out of which strivings had developed the great majority of the customs and beliefs of mankind in all ages and countries. Here were gathered, for instance, a large number of amulets, talismans, elixirs, and devices, which had in common the idea of protecting or prolonging man's existence. Many of these things appeared grotesque, even quite ridiculous, as means of bringing good luck to their owner, or, in other words, protecting from danger. But properly to understand magic it is necessary to remember that most of the things now called magical were originally objects devised on purely rational grounds as mechanisms of protection. It was only when such measures were shown to be unjustified, but were persisted in by a number of people owing to habit or fear, that they could properly be described as magical. Thus certain folk believed in the efficacy of shells, beads, bits of bone, and similar objects long after any justification for the ideas of virtue relating to them had disappeared. Some remarkable representations of pharmacies had been gathered together in the museum, ranging from an early English alchemical manufacturing laboratory down to the shop of the modern druggist, and here was an amazing demonstration of continuity from the early equipment with which Paracelsus might have worked down to a rational pharmacology. Altogether the museum helped the student of anthropology to interpret the real meaning of the customs and beliefs of primitive people, and in bringing together this collection Mr. Henry S. Wellcome had rendered a distinct service, not only to medicine and pharmacology, but to anthropology. A vote of thanks to Mr. Wellcome was accorded on the motion of the Earl of Onslow, seconded by Mr. W. G. Spencer, and a message from Mr. Wellcome was read by the conservator, Mr. L. W. G. Malcolm, stating his desire that the anthropological section should be developed as a progressive research institution. The members then inspected the collections, especially those dealing with divination, magic, and witchcraft.

YATREN.

IN 1921 Professor Mühlens and Dr. Menk of the Hamburg Tropical Institute reported some excellent results from the use of a new remedy for amoebic dysentery. This was a preparation manufactured by the Behringwerke at Marburg; its chemical composition was given as iodo-oxyquinoline sulphonic acid; it was stated to contain 28 per cent. of iodine, and was put upon the market under the name "Yatren 105." It is a yellowish powder, soluble in water to the extent of 4 per cent. at the ordinary temperature, and has the advantages of acting efficiently when taken in pill or cachet by mouth, of being innocuous and non-toxic, and in maintaining its potency on storage. During the last six years good reports have been published from countries other than that of its discovery, Germany—namely, by Silva Mello in Brazil, Birt and Reiss of Shanghai, de Langen and Lichtenstein in Batavia, Manson-Bahr in England, Buchanan in Palestine, and others. Dr. Schwartz of the Faculté de Médecine de Paris has conveniently brought together in a pamphlet[1] these scattered records, and has added four cases of his own. He shows that though from its solubility "Yatren 105" can be employed as a rectal injection, it acts equally well when taken in pill or cachet (four pills each containing 0.25 gram, or two cachets each of 0.5 gram, daily being the doses generally recommended), and is thus much more convenient than emetine; and, further, it is of service also as a prophylactic, needs no special precautionary measures, and can be carried on a journey and taken in the course of travel. The drug appears to be very efficacious in acute amoebic dysentery, and to have given good results in chronic cases, but it is only right, before we accept the report of cure, to suspend judgement in the latter until a longer interval has elapsed. The usefulness of such a piece of work as Dr. Schwartz has done is twofold: it brings together the experiences of workers in various countries as to the efficacy of a new form of treatment of a condition which has become widespread since the war, and which is the cause of much sickness and even mortality; and secondly, it should lead to a more extensive trying-out of a remedy which will receive a universal welcome if the laudatory reports hitherto published are confirmed by others.

THE centenary of the discovery of Bright's disease by Richard Bright, physician to the hospital from 1820 to 1843, will be celebrated at Guy's Hospital on Friday, July 8th. The Earl of Balfour, K.G., F.R.S., will attend, and at 3 p.m. Dr. W. S. Thayer, Emeritus Professor of Medicine, Johns Hopkins University, Baltimore, will deliver the Bright Memorial Oration in the Physiology Theatre of the Medical School. Academic dress will be worn.

THE Oxford University Junior Scientific Club announces that the twenty-ninth Robert Boyle Lecture will be delivered on Saturday, June 4th, at 9 p.m., in the hall of Balliol College by Sir Leonard Rogers, M.D., F.R.S., upon "Climate and disease incidence in India; forecasting epidemics."

[1] *Traitement de la dysenterie amibienne par le Yatrène 105.* Par Louis Schwartz. Paris: M. Vigné. 1927. (Roy. 8vo, pp. 56.)

THE FUTURE OF THE UNIVERSITY OF LONDON.

THE NEW SITE IN BLOOMSBURY.

THE purchase by the Senate of the University of London of what has been known for some years as the University site in Bloomsbury, immediately to the north of the British Museum, is undoubtedly one of the greatest advances towards the solution of the university question in London which have been made since the University was founded in 1826. As we announced in our issue of May 14th (p. 906) the Senate of the University has been enabled to acquire this site owing to two grants recently made to it. In July last, only a few months after the Duke of Bedford had resumed possession of the site which had been offered to the University in 1921 by the Government, under conditions with which it was then unable to comply, the Chancellor of the Exchequer promised to make the University a grant of £212,500 for the purpose of enabling it to provide new accommodation at South Kensington on the ground immediately behind that portion of the Imperial Institute which it now occupies, and for the purchase of such an amount of land on the Bloomsbury site as might be possible and within the financial resources of the University. The whole situation was changed by the recent offer of the Rockefeller Trustees to assist the University in the purchase of the entire site originally offered to it in 1921. We believe we are right in saying that the suggestion in this direction was only made by the Rockefeller Trustees in January last. We congratulate those who are responsible for the administration of the University on having achieved a large part of its object within three months of announcing negotiations for a purchase of part of this important site.

As we have already stated, the area now acquired is oblong in shape, and extends from the northern frontage of the British Museum to Gordon Square. It is bounded on the west by Malet Street, and on the east by Russell Square and the road leading from that to Gordon Square. This site comprises without the roads 8½ acres, and with the roads 11½ acres.

The Rockefeller Foundation was founded with the object of promoting in its widest sense "the well-being of mankind throughout the world." As is well known, in carrying out the primary object of the Foundation the Trustees have made considerable gifts for the establishment of institutions in connexion with medical education in different parts of the world. One important foundation of this kind already exists in London. Immediately adjacent to the new University site, between Malet Street and Gower Street, is the London School of Hygiene and Tropical Medicine. Its foundation charter was granted in April, 1924. The founding of this institution followed an offer by the Rockefeller Trustees of two million dollars towards the cost of building, and a guarantee by the Government of the sum of £25,000 a year for its administration and up-keep. Later on the Rockefeller Trustees promised to give £4,000 a year to provide for the payment of a director and an administrative staff. Dr. Andrew Balfour was accordingly appointed director, and he and his staff have been at work making preliminary arrangements ever since. The School was established by Royal Charter, and is governed by a Court of Governors, and a Board of Management nine in number. Since its foundation the School has taken over the administration and responsibilities of the London School of Tropical Medicine, which was established through the exertions of Sir Patrick Manson in connexion with the Seamen's Hospital at Greenwich at the Albert Dock branch. He lived to see it removed to the large building in Endsleigh Gardens, which included a teaching school, laboratories, and hospital wards. The School of Hygiene and Tropical Medicine will become, as provided in its charter, a school of the University of London as soon as its buildings have been erected and equipped.

Immediately after its appointment the Board of Management of the School of Hygiene and Tropical Medicine instituted an architectural competition for plans for the erection of the buildings required by the School on the site which had already been bought at a cost of £50,000 from the trustees of the Duke of Bedford. This architectural competition was limited to a select list of architects all of whom had had previous experience in connexion with the building of scientific laboratories, either for universities or large medical schools. As we have previously stated, Mr. Morley Horder was successful in this competition. After careful discussion by the Board of Management of the successful plans, and with a number of modifications in detail, it was determined to proceed with the construction of the building. The foundation stone was laid by the Minister of Health (Mr. Neville Chamberlain) on July 7th, 1926, and if the coal dispute had not occurred with its consequent difficulties in the provision of constructional steel, the building would by this time have been well advanced. At the present moment, however, great progress is being made. The steelwork is well under way, and the main contract has been let, and within a short time—two years or less—there will have been erected and ready for occupation what we trust will be one of the finest scientific buildings in London, and is without doubt destined to become one of the greatest schools of hygiene in the world.

So much for what has already been arranged and is in course of construction on the area immediately adjacent to the University site.

We trust that the Senate before allocating for the purpose of any individual building any portion of the site which has been acquired will, in the first place, decide on broad lines what the institutions to be erected in Bloomsbury are to be. An open architectural competition, in which information is given as to the institutions proposed for the site, will in all probability result in a satisfactory plan. A liberal spirit ought to be observed in these suggested plans; and, if possible, the assistance and collaboration of the London County Council and the local municipal authorities obtained.

It must be remembered, however, that the University will only be able to proceed gradually with the erection and equipment of its buildings. In the first place it, at the present time, has only available a sufficient sum of money for the erection of a central administration office. The decision of the Senate, which was made on February 23rd, 1927, to remove, if possible, the administrative offices from the site at South Kensington to Bloomsbury, was a most important one. The transference of these offices to Bloomsbury will be an enormous advantage in the future to everyone connected directly or indirectly with the University. The teaching staffs of

the various constituent colleges and the students will find that with very few exceptions it is a far easier matter to get to the University at Bloomsbury than to South Kensington, owing to the means of transport to and from the Bloomsbury area. Only those who have been intimately connected with the University, and have had frequently to go to South Kensington, can realize the difference in the administration and in all university activities which this transference to Bloomsbury will make.

The institutions which it has already been suggested might be located and erected on the Bloomsbury site are:

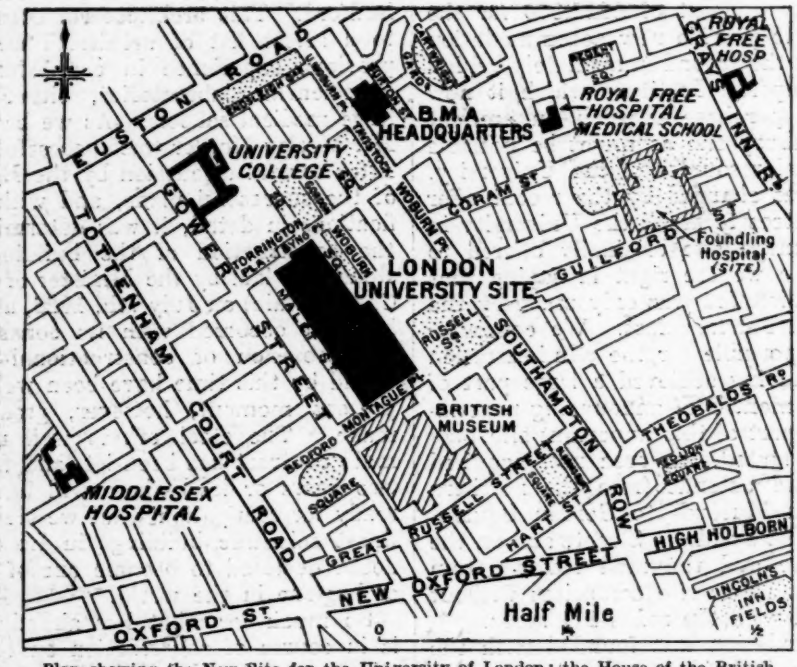
(1) *The Central Administrative Offices.* Concerning the necessity of these there can be no doubt.

(2) *The University Library.*

(3) *The School of Historical Research*, at present inadequately accommodated in a series of temporary one-storied buildings on a portion of the site in Malet Street.

(4) *A Students' Union*, or perhaps better still a University Union, which might become a centre for the social activities of teachers and students of the University, and a centre where hospitality might be dispensed to students from overseas and from other universities.

(5) *A Senate House or Ceremonial Hall.*—Some would prefer the latter, but it is to be hoped that the University will not attempt to provide an enormous hall for its public functions. One of reasonable size would, in the long run, be found much more useful and certainly much more economical. It might be asked in this connexion what is to happen with regard to the graduation ceremony. For some years this has been held in the Albert Hall to provide room enough for the large number of graduates upon whom degrees have to be conferred. It has been the custom of the University of London to confer all the degrees and present all diplomas obtained during the preceding year on the second Wednesday in May. The University, instead of this, might follow the practice of most other universities and publicly grant its degrees on several occasions during the year and immediately after they have been gained. This year, according to the report of the principal officer, the number who obtained degrees and diplomas in the academic year 1926 was 3,173. In the circumstances, which we may now confidently hope will be brought about within a few years, it will no longer be necessary to continue to hold an annual graduation ceremony in the Albert Hall. The Senate has partly clung to the policy of holding this one immense function in order to attempt to bring the existence of a university in London before the community. When a suitable building has been erected on the Bloomsbury site in the centre of London it will soon become known to the world at large as *the* University of London; this is a matter of considerable importance, which ought to receive attention so soon as the general lay-out plans of the new buildings come under consideration. At the present time the building in which the headquarters of the University of London are established is so little known to the community at large that when a taxi driver is directed to drive there he either asks for instructions, or goes to Gower Street or anywhere except South Kensington.



Plan showing the New Site for the University of London; the House of the British Medical Association; and the main buildings of University College.

(6) *Site for Certain Constituent Colleges.*—It has been suggested that certain colleges, such as Birkbeck College, might be allocated sites in the University area, and also that provision should be made for residential hostels, or quarters, for some teachers and students.

(7) *The Headquarters of the Officers' Training Corps.*—Provision for proper headquarters of this important part of the University work is very essential. In the past, as we all know, the University of London Officers' Training Corps has done excellent work, and is doing so at the present time. It is doing it, however, under very great difficulties and in very bad accommodation.

(8) *Administrative Offices for a Post-Graduate Medical School.*—From the point of view of medicine one of the most urgent needs of London is a post-graduate medical school. It may be suggested that space for a suitable building, to serve as the administrative headquarters of such a school, might be found on the Bloomsbury site. Many attempts have been made to provide in London a satisfactory and efficient post-graduate school; all up to the present have failed. Each school of this kind which has been attempted has never had a permanent headquarters or an efficient administrative staff. Further, no post-graduate school or association in London has ever been intimately or directly connected with the University or any of the medical licensing bodies. If a post-graduate school in London is to be a permanent success in the future we unhesitatingly say that it ought to be a school of the University, as the Athlone Committee indeed recommended; and it might be well that it should also have direct connexions or associations with the governing bodies of the Royal Colleges of Physicians and Surgeons.

Now that the University has acquired a central site upon which are a number of buildings, it might perhaps consider the possibility of allocating accommodation for the headquarters of a post-graduate school and take part in its formation on sound lines and in its administration. One great difficulty that has in the past stood in the way of the creation of a satisfactory post-graduate school of medicine has been the aversion of all the medical schools in London to give up their undergraduate work to become a post-graduate school. It is well known to everyone who has had extended experience of medical education that it is impossible to carry on in the same hospital and the same medical school an efficient and satisfactory post-graduate school and an undergraduate school. For some reason undergraduate students and post-graduates refuse to mix for educational purposes.

(9) *A University School of Law.*—The creation of a school of law in the University of London has in the past often been suggested and discussed. Provision for teaching in law has been made in the larger colleges of the University, for instance, in University College and King's College, and at the School of Economics, but any intimate connexion between those great law corporations—the Inns of Court and the Law Society—and the University has hitherto been found impossible. On several occasions discussions have taken place with the authorities of these institutions

THE UNIVERSITY QUARTER OF LONDON.

A, The new site of the University of London.

B, The British Museum, showing the dome of the Reading Room.

C, The site of the School of Hygiene and Tropical Medicine, now in course of erection.

D, The House of the British Medical Association (Tavistock Square).

E, University College.

F, University College Hospital. University College Hospital Medical School is directly opposite the hospital on the south.

(From an air photograph by Aerofilms, Limited.)

with the object of creating a school of law, which might be known as such. When the University was reconstructed in 1898 the commissioners put upon the new Senate representatives of the law corporations. These were six in number, a representative each for Lincoln's Inn, the Inner Temple, the Middle Temple, and Gray's Inn, and two representatives of the Law Society. This was a larger representation of institutions than in any other branch of education on the Senate. Closer working between these law corporations and the University did not result. Presumably on account of this failure in twenty-five years to effect any closer connexion between the University and the law corporations, and the desire to diminish the size of the Senate, the six representatives under the new constitution automatically disappear. In the recent reconstitution of the Senate a similar result happened with regard to the Royal Colleges of Physicians and Surgeons. They had been represented on the Senate by four members, two appointed by the Royal College of Physicians and two by the Royal College of Surgeons. As with the law representatives these four representatives were appointed when the University was reconstructed in 1898, the intention being to bring about a closer working between the Royal Colleges and the University as regards its medical faculty. We cannot help regretting that the University and the Royal Colleges have not found it possible in the past twenty-five years, during which period the Colleges have had representatives on the Senate, to evolve some such system of closer working. It would be an enormous advantage to the students of the medical schools in London if the University and the Royal Colleges could establish examinations which in part were common to the three bodies. Many members of the London medical schools who have been examiners to the University and to the Royal Colleges in medical subjects, especially as regards the final qualifying examinations, say that in reality there is little difference between the final examinations of the three bodies. The University has additional examinations in some special subjects, whereas the Colleges combine these subjects. Surely it would be possible to evolve some plan by which the University and the Colleges could carry on joint examinations. This is a subject which deserves serious consideration in the immediate future. There is no doubt it is becoming increasingly difficult to find men of recognized position and superior attainments who are willing to give the time which is necessary to the examinations of the three bodies.

(10) *Central Hospital for Tropical Diseases.*—There is, we believe, a proposal to establish a central hospital for tropical diseases in the immediate neighbourhood of the School of Hygiene and Tropical Medicine. If this is done, and we do not doubt the necessity, we hope that it will be in its immediate neighbourhood, such as the area now vacant immediately to the south of the frontage of the new buildings now being erected in Keppel Street. The site is opposite the London School of Hygiene and Tropical Medicine, and its buildings might be made architecturally and otherwise to correspond.

(11) *A Residential Campus.*—At the graduation dinner held at the Fishmongers' Hall on the evening of the graduation ceremony on May 11th it was interesting to hear an allusion in one of the speeches to the possibility of the creation of a central university residential campus in Bloomsbury. We are told that the roll of internal students in 1926 comprised 9,340, and that there were 850 foreign and oversea students attending university institutions in London. Only a small proportion of these internal students would require residential accommodation, but for the oversea and foreign students it seems essential that residential accommodation should be provided.

It was suggested that in the immediate neighbourhood of the University there was a site which might be acquired for such a university residential campus. The site mentioned was that of the Foundling Hospital. Perhaps some of our multi-millionaires who are desirous of doing the best they can for the country and the empire might give serious consideration to the suggestion. It would be difficult to imagine anything which would promote the interests of the country and the empire more than the establishment of residential accommodation of a proper kind, and in such a position as is suggested.

There are many other points in connexion with the development of the University site in Bloomsbury which we should like to have discussed, and perhaps in a future issue we may be able to pursue the possibilities of development of the Bloomsbury site in connexion with the University and university education.

THE ODONTOLOGICAL COLLECTION OF THE ROYAL COLLEGE OF SURGEONS OF ENGLAND.

THE Odontological Collection of the Royal College of Surgeons of England has been completely reconstructed and rearranged under the direction of Sir Frank Colyer, K.B.E., F.R.C.S., who has been curator for over twenty-five years. It was formally opened by the President, Sir Berkeley Moynihan, Bt., on May 23rd, when the Section of Odontology of the Royal Society of Medicine held its annual meeting by invitation in the College. Sir Berkeley Moynihan spoke as follows:

Address by Sir Berkeley Moynihan.

There is little need for me to attempt to lift up your blood with persuasion in order to convince you of the importance of the odontological collection which now finds a proud and permanent place in our Hunterian Museum. It affords beyond question the most complete representation ever made of all that concerns the teeth—of their origin and growth, of their structure, their disorders, their comparative anatomy and comparative pathology. It is a collection which we who are responsible for the welfare of this Museum feel ourselves most fortunate to possess.

May I briefly remind you of the steps which have led to the formation of our collection and seek to interest you in its further progress; for happily there is no finality in any department of surgery—least of all perhaps in that which relates to the dental system?

Seventy years ago the leading dental surgeons of this country formed the Odontological Society of Great Britain. With great foresight they began at once to preserve and collect the more instructive specimens shown at its meetings, and thus in course of time they found themselves in possession of a large museum. In 1907, when the Odontological Society became the Odontological Section of the Royal Society of Medicine, this museum had so grown that it contained no fewer than 5,000 catalogued specimens. It was then in charge of an indefatigable and devoted honorary curator, Mr. J. F. Colyer, and Sir Frank Colyer, I am glad to say, is still honorary curator of the collection, and to this day displays all the energy and enthusiasm, and even more than the high competence, of twenty years ago.

Those responsible for the management of the newly formed Odontological Society naturally regarded the Museum as an essential part of their organization. They recognized also that if the collection were to continue to expand it would be better to place it where the necessary skill in the preparation and preservation of additional specimens would still be available, and where it would meet not only the immediate needs of the society, but would also serve the manifold purposes of a great national collection. With these objects in view the Royal Society of Medicine, in 1908, offered the collection, as a trust, to the Council of the Royal College of Surgeons; the trust was accepted by the council, and by the end of 1909 the collection was installed in a large new room—the "odontological room"—on the ground floor of our Museum, the cost of installation being defrayed by the College.

To the specimens assembled by the Odontological Society were added John Hunter's original specimens—things of utmost beauty of workmanship, and beyond all price both from their scientific and their historical interest. Among these are the very preparations, 83 in number, on which Hunter founded his opinion as to the manner in which teeth are formed and grow—they are known to all students from the fine drawings which were reproduced by Hunter in his *Natural History of*

the Human Teeth (vol. i, 1771; vol. ii, 1772). There were also added 500 specimens from the odontological collection of our College—many of them original Hunterian specimens—to illustrate the comparative anatomy of the teeth.

The Council of the College, while gladly undertaking the responsibility of maintaining the collection, wisely acceded to the desires expressed by those who negotiated the transference, that the Odontological Section of the Royal Society of Medicine should continue to take a direct interest in the welfare and growth of the collection, should use its contents at their meetings and demonstrations, and should advise in its general management. This part of the trust, I am glad to say, has always been, and is now being, faithfully observed. The Section nominated Sir Frank Colyer as honorary curator, and through his labours, and with the generous help and unflagging zeal of other members of the Section, the odontological collection has grown with amazing rapidity. Especially has that part increased which illustrates the comparative pathology of the teeth—the diseases which affect the teeth and jaws of horses, dogs, and all domesticated and confined animals. This is an important branch of knowledge which Sir Frank Colyer has made his own, and he has utilized to the full the wealth of material placed at his disposal by the Council of the Zoological Society of London. Nor have other sources of information been neglected. The diseases which occur in men living in various stages of civilization and at various periods of history are here illustrated, as well as those dental diseases and disorders which are found in animals living in a state of nature.

Two years ago, so greatly had the collection outgrown its original accommodation, my Council had to consider how increased space could be obtained. I hope you will agree with me that our architect, Mr. Frere, has overcome certain initial difficulties. He has succeeded in extending the original room so that it is now one of most spacious dimension—large enough, so we hope, to provide accommodation to meet not only the needs of the present time, but those also of the immediate future. The collection has been rearranged, new cases have been added, and a new descriptive catalogue is well advanced in preparation. In a sense, therefore, I am to-day declaring open a new Museum—one which assuredly has no rival in any land. There is here a collection that has much to offer to the dental student anxiously concerned perhaps with examinations, but there is still more to offer to the student of research—to the dentist who is seeking to extend the knowledge on which the daily practice of his profession is based. This is, above all, a research collection. Inquirers in past years have found in its cases and upon its shelves the original materials of which they were in search, and future visitors from our home schools, as well as from those overseas, will find on an even larger scale that we have catered for all their needs. We aim, here as elsewhere in our Museum, not only at the maintenance but also at the progress of knowledge in all departments of surgery, and not least in that essential branch which is the province of dental surgeons.

It is not too much to say that some of Hunter's most fundamental discoveries were the direct outcome of his study of teeth. It was the absorption of alveolar bone following the removal of a tooth that led to his views on the methods by which dead or useless parts of the body are gradually removed. Many of his conclusions regarding the nature of living matter are drawn from his observations on tooth formation.

It is the less necessary for me to extol Hunter's fundamental contributions to dental surgery because this aspect of his work has been so amply and so artistically dealt with in Sir Frank Colyer's monograph, *John Hunter and Odontology*. You have merely to turn over the pages of that fine work to realize a little of the debt we owe to John Hunter. And always you may see in the collection under Sir Frank's charge the marvellously beautiful preparations made by the hand of immortal Hunter himself. The study of the teeth and their diseases in relation to general disorders, a study inaugurated by our contemporary William Hunter, will probably prove to have, indeed in my judgement has already had, a profound and permanent influence upon general medicine. The immediate ravages of oral sepsis may prove serious enough, but the remote complications, seemingly so unrelated to their true cause, are a grave menace both to health and life.

I cannot better illustrate one kind of service performed by this Museum than by reminding you of a late addition. We all lament the death of the late Mr. Howard Mummery, a Fellow of this College; he had one of the most original and inquiring minds ever applied to odontological problems, and his industry and insatiable appetite for new knowledge continued throughout a long life. After his death, his microscopes, his instruments, and the material results of all his investigations were left to this collection, so that future students might benefit from his endless and unfinished labours. Without such a provision as is afforded by our museums, the lifework of a great man might be lost. As it is, the fruits of Mummery's life will be preserved side by side with the "Tomes" Collections.

The Council of this College regard as their highest trust the conservation and enlargement of this Museum, originally a legacy of Hunter's own brain and hand, and therefore held by us all as sacred. Men of high intellectual attainments, of unwearying industry, and of exquisite skill have rejoiced to labour in the Museum, and have willingly spent their best years in its service. John Hunter's influence is beyond the reach of death. His written word, clumsy and uncouth though it may sometimes be, contains a message which stirs the hearts of men in earnest pursuit of truth. Above every one in our profession of surgery he teaches by his own example the true method of approach to learning by way of observation and experiment; and his industry was simply relentless. The multitude of his specimens in our Museum shows the greedy fervour of his life-long search for stones wherewith to build the bridge from ignorance to knowledge. Close contact with him changes everything; in close contemplation of his labours and in communion with his so ardent mind men are moved to great devotion in the cause he so nobly served. Owen, Paget, Flower, Shattock—great men and great teachers—all of them were inspired by him as by no one else, and their work in our Museum is their homage to the soul of John Hunter.

To-day, on behalf of the College, I tender our sincere and grateful appreciation to two others who by long and most skilful service have greatly enriched the treasures of our Museum—Sir Arthur Keith and Sir Frank Colyer.

MEDICAL EDUCATION AND PRACTICE IN AMERICA.

THE rapid expansion of population in the United States during the latter half of the nineteenth century led to a demand for medical practitioners which was far in excess of any supply available in North America from existing centres of training. To meet the shortage many proprietary medical schools sprang into existence, turning out graduates in large numbers who, owing to the limitations of their qualifying courses, had had small opportunity for the acquisition of either knowledge or skill. American towns at one time and another produced over four hundred schools of this illusory type. Thanks to various wholesome influences, emanating mainly from the profession itself, few, if any, of them now remain. At a recent count the total number of medical schools in the United States was 79, which is still perhaps rather above the actual requirements of the country.

In the process of elimination the test of survival was that of efficiency secured under regulations. These regulations, initially strict so as to serve their immediate object, are now believed to be acting in restraint of sound medical teaching, through failure to envisage the needs of the community to which the medical graduate may be called on to minister. This consideration has engaged the attention of the Association of American Medical Colleges, one of the bodies which have been most active in the cause of reform. After sundry inquiries and discussions a Commission, including well known names, was appointed to carry out a study of the community health needs of the United States, in the hope of establishing fundamental relationships which might become a basis for the formulation

of a more elastic medical code. The Commission began its work in 1925, and has now issued a preliminary report.

The data of the report were mainly derived from the answers to a set of questions addressed to over 500 physicians, of the classes of 1915 to 1922 inclusive, engaged in general practice in communities of 50,000 or less, in 24 States of the Union and two Canadian provinces. An analysis of over 20,000 attendances shows that office consultations were 55 per cent. of the total, home visits 35 per cent., and hospital attendances 10 per cent. Allowance being made for the hospital attendances, these proportions come very near to insurance experience in the United Kingdom. In serious illness treatment was often greatly hampered by the economic status of the patient, which is seldom the case here.

The population per doctor in the United States, excluding New England, is in general less than in this country. It ranges from 536 in places of over 100,000 people to 1,338 in places under 1,000. Medical practice in isolated agricultural communities is little sought after for two reasons. The first is that standards of living there are repugnant to men of education and culture. They present, indeed, a serious national problem. The second reason, as given by the Commission, is that in many cases the young American graduate, on completion of his training, does not feel competent to assume the responsibility of an independent charge. He has been taught so to lean on laboratories and other organized services that he is reluctant to stand alone. Such young graduates, it is said, are the products of schools which have not fully envisaged the medical needs of the day.

The Commission reports that in the United States there are 15,417 specialists, or 10 per cent. of the whole profession. Among recent graduates the tendency is towards a higher rate of specialism still. For Louisiana the recent figure is 19 per cent., for Wisconsin 15 per cent., and for Connecticut 18 per cent. Of the graduates of two recent years in 52 medical schools 28 per cent. and 24 per cent. respectively were restricting their practice. The Commission expresses no opinion on these figures except to say that "the proportion of graduates practising only a specialty varies greatly with the school from which the student graduated, bearing out a general impression that emphasis in training may be a factor."

The influence of medical licensing upon medical education is regarded by the Commission as on the whole beneficial, but inasmuch as each State has its own requirements there has been considerable confusion. It was found impossible to secure the passage of identical legislation by all States, but the attempt to do so has effected much in the interests of uniformity. The freedom of the medical profession to practice has, however, been bought at a price, for most regulations extend their protection to irregular practitioners also. There is, however, a growing opinion that all healers, whether regular or irregular, should conform to the same standards of preliminary education and competence in diagnosis.

Points of resemblance between medical conditions in England, and in America as noted by the Commission, have been referred to above. Among the main contrasts emerging are the existence in America, as opposed to England, of wholly ineligible areas of practice, and the occurrence of diffidence in young medical graduates. The increasing proportion of specialists in America is impressive. It may, however, as stated by the Commission, merely reflect the attitude of certain schools. The equality before the law of regular and irregular healers is perhaps the most conspicuous divergence between the two countries. Nothing but the growth of public opinion, guided by the high example of American medicine at its best, seems likely to extinguish this offence to reason.

Of the reforms in medical teaching which may be expected to result from the data submitted by the Commission it would be precipitate here to speak. The Commission itself is apparently precluded by the terms of its reference from making concrete suggestions. The facts, however, have been declared. Medical colleagues on this side will watch with friendly interest the progress of events.

England and Wales.

INVALID CHILDREN'S AID ASSOCIATION.

LORD BURNHAM, who presided at the annual meeting of the Invalid Children's Aid Association, on May 17th, drew attention to the cordial relations which existed between the Association and the hospitals, the London County Council, the Metropolitan Asylums Board, boards of guardians, dispensaries, and nursing associations. In this way the provision of adequate treatment and after-care for the sick and crippled children of London was greatly facilitated. During 1926 help had been given in 18,000 cases, and residential accommodation in London or the country had been secured for between 7,000 and 8,000 children. A large number of invalid carriages, surgical instruments, boots, and crutches had been supplied. The income during the year had amounted to over £84,000, of which £15,230 had been received from parents towards the cost of helping their children. Sir Thomas Barlow described the origin of the society nearly forty years ago in a small band of voluntary helpers who visited child out-patients in their own homes. Convalescent homes and open-air schools were then established, an invalid school was started, and, latterly, the difficult problem of acute rheumatism was being faced. Great benefits had been obtained from the treatment by open-air methods of children recovering from acute rheumatism. An appeal is being made for £15,000 for the completion of the new institution for children at West Wickham, Kent.

THE LONDON EDUCATION COMMITTEE.

The Education Committee in London proposes as an experiment for one year to review the medical record of each child in the central schools at the age of 15½ years, and to carry out a detailed medical examination in cases in which the previous history or appearance indicates that such an examination is desirable. At present the children in both ordinary and central schools are examined when approaching the age of 14, but there is no provision for further examination of the children who continue in attendance at the central schools, as about 2,000 of them do, until the age of 16.

A suggestion that "Vitaglass" should be installed in certain of the elementary schools of London is resisted by the Education Committee, which points out that only from the middle of May to September does sufficient ultra-violet radiation penetrate the London atmosphere to make its consideration worth while, that for five weeks of this period the schools are closed, and during the rest of the time the classroom windows are generally wide open. Further, when it is considered that the glass of all windows in London rapidly becomes coated with a layer of fine dust which must obstruct the passage of ultra-violet rays, that only such children as are seated in the direct path of the rays from the sky could be affected, and that even these children would be benefited only in so far as the rays fell upon the unclothed portions of their bodies, it is held to be more important in London to continue the policy of open-air methods of education whenever possible and to draw the attention of the teachers to the benefits of the widely opened window.

SURREY TUBERCULOSIS SANATORIUM.

Lord Ashcombe, Lord-Lieutenant of Surrey, laid the foundation stone on May 11th of the central block of the Surrey County Council Sanatorium, at Milford. Although the scheme for providing residential accommodation in Surrey for the treatment of tuberculous patients was originally drawn up in 1912, the outbreak of the war put an end to the project for the time, and arrangements were made to obtain accommodation in existing institutions elsewhere. It is now proposed to provide 300 beds, including two blocks each containing 50 beds for advanced tuberculosis, and four blocks of 50 beds each for early and intermediate cases. The cost of the sanatorium is estimated at close upon £200,000.

NEW MINISTRY OF PENSIONS HOSPITAL AT LEEDS.

Princess Mary visited Leeds, on May 16th, to open the new Ministry of Pensions Hospital at Chapel Allerton, which has replaced the Beckett's Park Hospital, and will serve Yorkshire, East Lancashire, Lincolnshire, Nottinghamshire, and Derbyshire. The buildings comprise six wards for officers and men, with a total of 200 beds, two operating theatres, an *x*-ray department, a bacteriological laboratory, massage and electrical departments, and an isolation block. There are also workshops for the construction and adjustment of artificial limbs, a large recreation hall, open-air balconies, and extensive grounds. Sir Berkeley Moynihan delivered an address at the opening ceremony, and mentioned that the foundation stone of the first Leeds Infirmary had been laid by Edwin Lascelles, afterwards the first Lord Harewood. Major Tryon, Minister of Pensions, stated that of the 24,000 pensioners receiving treatment under the Ministry, 14,500 were in-patients in hospitals. He referred appreciatively to the valuable work of the Wounded Warriors' Welfare Committee, and added that Leeds was the second greatest centre in the country for the supply or repair of artificial limbs.

CAMERON HOSPITAL, WEST HARTLEPOOL.

The new orthopaedic department of the Cameron Hospital, West Hartlepool, is intended primarily for out-patients, but is so arranged that inmates may be brought into it without difficulty. The nine rooms of the new building have been equipped with the most modern forms of apparatus, including hydro-electrical, radiant heat and light baths, an ultra-violet lamp for general and local radiation, special machines for limb and body exercises, a high power suspension heat lamp, and a thermostatic hot compress. The chairman of the hospital stated at the opening ceremony that under the old cramped and unsatisfactory conditions no fewer than 6,442 treatments had been administered during 1926. Although no further financial appeal was necessary in connexion with the new orthopaedic department, the hospital had an overdraft at the bank, and the general income did not meet the expenditure. During 1926, 937 in-patients had been admitted, and 426 out-patients treated.

LEICESTER ROYAL INFIRMARY.

Improvements at the Leicester Royal Infirmary during 1926 included the opening of the reconstructed *x*-ray department, of which we gave a brief description on May 1st, 1926 (p. 803). In October the open balconies on the three floors of the south-east wing were replaced by glass-enclosed balconies, and the change has been found very beneficial. The new examination rooms which have been added to the casualty department have enabled observation to be kept of sick and injured patients whom it is desirable to retain for a few hours. The possibility of increasing accommodation of this kind and making it available during the night is under consideration. An appeal is being made for £40,000 towards the reconstruction of the central part of the infirmary, which was erected in 1861; it is hoped to construct additional operating theatres and to extend and improve the administrative accommodation. In the annual report for 1926 it is stated that the number of in-patients treated was 5,632, as compared with 5,268 in the previous year; the number of operations had also increased to 4,171, and the out-patients to 146,733. The income had risen from £74,411 to £75,763. Dr. J. D. Slight, one of the honorary physicians, has presented an electro-cardiograph to the institution.

Ireland.

LOCAL APPOINTMENTS.

At the annual meeting of the Leinster Branch of the British Medical Association the following resolution was passed and the honorary secretary directed to forward it to the Department of Local Government and Public Health:

> The Leinster Branch of the British Medical Association welcomes the recent legislation by which the making of local appointments is, with certain exceptions, vested in a central authority. It is satisfied that this change will tend to prevent nepotism and the exercise of other improper influences in the making of medical appointments. Further, while recognizing the propriety of encouraging promotion in the public service, as is provided for in Section 5 (1) of the Local Authorities Act, 1926—a reform long demanded by the medical profession—the Branch believes that caution is necessary in any action taken under that section. It is urged that the Minister should withhold sanction to any appointment which is not made on grounds of long and meritorious service, with due regard to evidence of attempt at self-improvement, such as post-graduate work and possession of higher qualifications. Otherwise the intention of the Act is likely to be defeated.

EPIDEMIC DIARRHOEA.

A circular letter has been addressed by the Department of Local Government and Public Health to each of the sanitary authorities in the Free State directing attention to the marked increase of mortality from diarrhoea and enteritis of children under 2 years during the third and fourth quarters of 1926. As it is thought not unlikely that this disease may appear in epidemic form and with little warning, sanitary authorities are advised to consult with their medical officers of health as to the means available for controlling an outbreak. In point of incidence diarrhoea diseases are associated in a special degree with urban conditions of domicile, with the second six months of the year, and with the second and third months of infant life. They are attributable to food contamination arising from disregard of cleanliness in the household and in municipal sanitary arrangements, from the agency of flies as carriers of infection, and from an unwholesome milk supply. Young children suffer particularly from the latter cause when they are changed from breast-feeding to artificial diet. The circular concludes as follows:

> It is important not only to insist on domestic cleanliness, but also to secure that all accumulations of dust, refuse, or filth about the dwellings are removed at frequent intervals. This applies to the contents of privies, manure heaps and ashpits, and to the cleansing of yards, passages, and streets. In this way the breeding of flies, which are such potent agents in polluting food and drink, may be prevented. All practical measures for the destruction of house-flies, in order to prevent their access to food, should be taken. Strict attention to the observance of cleanliness (hands and clothing) on the part of milkers, and thorough cleansing of utensils used for containing milk, should be enjoined. Receptacles for the storage of milk in dairies and in the homes of consumers should be protected with muslin or other covering. A weekly record of bacterial content of the milk supply of urban areas would constitute a valuable index of the extent to which satisfactory methods of production and handling are adopted. The Minister would suggest that where a child welfare scheme is in operation the organization should be utilized for giving suitable warning and instruction to mothers of young children at sessions of maternity centres and through the domiciliary visits of health visitors and for obtaining information as to the incidence of diarrhoea diseases. As far as possible the leave programme of the health visiting staff should be settled with due regard to the importance of maintaining a full service of experienced visitors during the period when an attack of summer diarrhoea may be apprehended. If arrangements exist for providing milk to expectant and nursing mothers and young children, the sources of supply should be inspected with a view of guarding against possible contamination, and the subsequent methods of distribution should be regulated with strict attention to cleanliness.

MEDICAL PRACTITIONERS BILL (FREE STATE).

The Medical Practitioners Bill has passed through all its stages in the Dail and Senate.

Union of South Africa.

[FROM OUR CORRESPONDENT IN CAPETOWN.]

A PUBLIC HEALTH AMENDMENT BILL.

In the House of Assembly, on March 23rd, the Minister of Public Health (Mr. D. F. Malan) moved the second reading of the Public Health Act (1919) Amendment Bill. Its principal provisions relate to the training of midwives, the notification of venereal diseases, and to vaccination. The bill provides that the responsibility for the training of midwives, other than those in service in maternity homes, should rest with the Union Government, and power is taken to make arrangements with the provincial administrations to have these nurses trained in existing maternity and nursing homes. There would be compulsory inspection of these institutions, the idea being that they should be kept up to as high a state of efficiency as possible; and

they would also be registered, but the right to register would be refused if certain requirements were not fulfilled. Moreover, local authorities would be required to keep a list of qualified maternity nurses.

With regard to venereal diseases, the laws existing at present were, the Minister said, very stringent, but a weakness was that only the district surgeons were entitled to bring to the notice of the proper authorities all cases of venereal disease coming under their notice. The ordinary doctors were not obliged to do so, and as the law stood now it was rather dangerous for them to do it, as they might be sued for libel. This bill, however, would make it obligatory on all medical practitioners to bring to the notice of the proper authorities all cases of venereal disease known to them, and cases known to them of patients who refused to be properly treated by medical practitioners. He predicted that if this provision came into operation it would be a very important step forward in dealing more effectively with this dangerous disease.

The provisions as to vaccination were, the Minister said, among the most important. It was desired to amend the existing law to meet the scruples of conscientious objectors. Prior to the consolidating Act of 1919 compulsory vaccination was in force in the Cape Province, the Transvaal, and the Orange Free State, but provision was made in the Natal laws for the exemption of conscientious objectors. When the Act of 1919 was passed the privilege possessed by the conscientious objectors of Natal was taken away from them. Soon after this, owing to agitation in Durban, the then Prime Minister promised that the law would be amended later on, but that meanwhile no prosecutions would be instituted against those who, on conscientious grounds, refused vaccination. The result of this was that there had been a rapid falling off in the number of vaccinations in the Union. In 1920 the number of vaccinations was 523,300, and in 1921 it was 622,000, in 1923 it had fallen to 543,000, in 1924 it was 394,000, and in 1925 it was 364,000. The position to-day was that for the year ended June 30th, 1925, though 76,800 births were registered, only 10,331, or 13 per cent., of the children were vaccinated. The amended bill would make a distinction between the position where there was an actual epidemic outbreak and a threatened epidemic outbreak on the one hand, and, on the other hand, normal circumstances and conditions. In case of an actual outbreak, or a threatened outbreak, no exemption would be allowed to conscientious objectors. When there was an actual epidemic of such a virulent disease as small-pox, the Minister said, private rights or objections must not stand in the way of public safety. The procedure to be followed in normal times would be that conscientious objectors must apply within six months of the birth of a child, or within a certain period if they were themselves not vaccinated, on a prescribed form. They would be required to appear in person before the district registrar of vaccination, and to make an affidavit stating on what grounds they objected to compulsory vaccination. The application and the affidavit would be transmitted to the registrar of vaccination of the province, and it would lie with him to make a decision concerning these objections. In arriving at his decision he would take into consideration whether the applicant for exemption had sufficient knowledge and intelligence to form a judgement, and whether his objection on these or other grounds was genuine. The method which it was proposed to adopt to find out whether an applicant was a bona fide conscientious objector or not was that of sacrifice. In other words, it would be easier for a conscientious objector to comply with the law than to obtain an exemption. The small sacrifice required would be the test whether the objection was genuine or not.

The bill passed its second reading and was set down for the Committee stage.

Plague in Capetown.

No little stir was caused in Capetown when, on April 8th, it was reported that a case of suspected plague had occurred on board the outward bound mail-boat, the *Armadale Castle*, due to sail for Southampton the same afternoon. The patient, a member of the crew, had become ill on April 6th, and was removed to the New Somerset Hospital the following day, where he died very shortly after admission as a case of pneumonia. Smears made from secretion taken at the *post-mortem* examination revealed a bipolar organism similar to *B. pestis*, and a provisional diagnosis of plague was made. Immediately this became known the authorities took every precaution possible. One contact, a member of the crew who had shared a cabin with the patient, was removed to the quarantine station for observation. Members of the medical and nursing staffs of the New Somerset Hospital who had come in contact with the case, and the ward to which he had been admitted, were placed in quarantine. The ship was similarly put in quarantine and moved out to an anchorage in the bay, where she embarked her passengers. All persons who had booked by the steamship were notified before embarkation of what had occurred and given the opportunity not to proceed. All but two, however, decided to make the voyage, and the vessel departed shortly after her scheduled time. On April 11th, as the result of animal inoculation tests carried out by the Government Bacteriological Department, the diagnosis of plague was confirmed. The chief medical officer of health for the Union has stated that there was no need for anxiety as every precaution had been taken from the beginning. He considered the case a sporadic one as no advice of the occurrence of plague at any of the coastal ports visited by the steamer prior to her arrival at Capetown had been received. Since the departure of the boat nothing untoward has occurred on board according to radio messages received, and the contacts in Capetown have remained well.

Southern Peninsula Medical Society: Annual Dinner.

The annual dinner of the Southern Peninsula Medical Society was held at the Marine Hotel, Muizenberg, on March 26th, when some thirty-three members and their guests sat down. The president of the society, Dr. A. J. Ballantine, presided, and the principal guests were Dr. J. A. Mitchell, chief medical officer of health for the Union, and Mr. James Luckhoff, president of the Cape Western Branch of the Medical Association of South Africa (British Medical Association). After the usual loyal toasts had been honoured, Mr. Luckhoff proposed that of the Southern Peninsula Medical Society, and expressed his pleasure at being privileged to be present as the representative of an organization which included among its members practically every practitioner who belonged to the Southern Peninsula Medical Society. Dr. S. F. Silberbauer replied on behalf of the society. The toast of the guests was proposed by Professor A. W. Falconer, Professor of Medicine in the University of Capetown, and responded to by Dr. Mitchell and Mr. W. Floyd, a past president of the Dental Society of the Cape Province. The singing of the National Anthem brought a most enjoyable function to a conclusion.

Influenza Medical Emergency Organization, Capetown.

The following scheme has been adopted by the Council of the Medical Association of South Africa (British Medical Association), Cape Western Branch, for the organization of the medical profession in the event of an outbreak of influenza in Capetown. It stipulates in the first place that medical men in general practice should not be interfered with, and that each individual general practitioner should confine his work as far as possible to the area in which he generally practises. The scheme, briefly outlined, provides for the appointment of (*a*) an organizing medical secretary, (*b*) district medical commandants, and (*c*) emergency medical officers. For the efficient working of the scheme the municipal area has been divided into wards; in medical charge of each, for purposes of administration only, will be a medical commandant selected from among the senior general practitioners residing in that ward. It will be his duty, in the event of an epidemic, to collaborate with his colleagues practising in that ward, and to keep in touch with the

depots to be established by the municipal authorities at various points in the ward. Whenever he considers that the pressure of work has become too great for those ordinarily practising in the area he will communicate with the organizing medical secretary with a view to having medical assistance supplied. Emergency medical officers will be recruited from the ranks of specialists, retired medical men, and senior medical students. They will be invited to volunteer for service in the event of an emergency being declared, and will be allotted by the organizing medical secretary to areas as required, where they will get in touch with the district commandant of the ward and work in collaboration with him. The organizing medical secretary will work out the details of the scheme and be responsible for compiling a roster of emergency medical officers. In the event of an epidemic he will have administrative charge of the organization and will act in collaboration with the medical officer of health for the city. The Council of the Medical Association has promised the municipal authorities that this organization, together with its organizing medical secretary, will be at the disposal of the medical officer of health for the city in the event of an outbreak of influenza occurring. It will be called into being only in time of real emergency.

Correspondence.

DRUGS FOR SLEEPLESSNESS.

SIR,—As my experience of the use and value of the barbitone group of sedatives is very different from that reported by Sir William Willcox (May 14th, p. 877), I should like to place another point of view before your readers. In my experience, sleeplessness is not merely a symptom but one of the most common causes of mental disturbance, and therefore in the branch of medicine in which my work lies it is of the utmost importance to investigate every method of treatment which offers any hope of success. With this end in view, twenty years ago I began to use medinal, first in the way that Sir William Willcox advises, that is intermittently, but as the results were very unsatisfactory from the remedial point of view, I varied my methods constantly until at the present time, and for twelve years past, my practice is to find the smallest dose that gives good results and then to administer it regularly every night until the mental and physical health of the patient has been restored and stabilized for six or twelve months, and in some cases for even longer. In this way I have advised five or seven grains of medinal or a tablet of dial to be taken for long periods, and I have never known any bad results from the effect of the drugs. On the contrary I have known many persons saved from serious mental breakdown and preserved in mind and body to continue their several occupations.

I use these drugs for patients of any age, and at the present time among the many patients whom I know to have been and still to be taking these sedatives, under medical advice, there is a girl of 15 who had a severe though short attack of mental confusion a year ago. She was at once put on five grains of medinal every night, and has been taking it continuously up to the present, and I hope will do so for a further six months. The girl is normal in every respect and has been so for nine months; but the important point is to prevent relapse, which is so common in patients of this age. For unstable pregnant women I recommend five grains of medinal to be taken every night during the last two or three months of pregnancy and for six months after the baby is born, and I have never known a mental breakdown in any patient who has carried out this advice. In men in middle life, when the nervous system has become over-stimulated by work or anxiety, a mental breakdown can very frequently be averted by a prolonged administration of these drugs. When one comes to later life, the mental activities may become lessened or interfered with by sleep becoming defective in quality or quantity, and I have patients at the present time who have taken these drugs under medical advice continuously for several years. A professor in one of the universities, who is over 70 years of age, and who for ten years before he took medinal had suffered from defective sleep with all its concomitant disabilities, has now taken five grains of medinal every night for over five years. He has been sleeping well, and during the last few years has been on a higher level of physical and mental health than had been the case for many years previously.

Space will not permit me to give the many other types of person benefited by taking these drugs. Though no one could use them more freely than I have done, I have never seen any bad effects. I have had the metabolic rate taken and other tests made on patients who have been continuously on these drugs, and the results have all been normal. As with all drugs, a few persons have an idiosyncrasy to them, but I have seen nothing more serious than a simple rash which, when the drug is changed for another, as it must be, quickly disappears. To call these drugs dangerous is, in my experience and in that of many other physicians with whom I have discussed their use, entirely without justification in clinical experience. Further, to so label them is to discourage medical men from using them and to antagonize patients against taking them. To warn a nervous patient that the drug that you are giving him is dangerous is to leave in his mind an anxiety which may go a long way towards counteracting the remedy that you have prescribed.

After spending fifteen years in mental hospitals and seeing the wreckage of humanity, much of which might have been prevented, I have spent the next twenty years of my professional life trying to correct the conditions which lead to mental disorder. Defective quality and quantity of sleep stand high in this list, but, notwithstanding that this is widely recognized, frequently nothing is done to remedy it except to give bromides, often in large doses, the effect of which in these cases is commonly to disturb the digestion and to confuse the mind.

As to addiction, from my own experience and from any evidence that I have been able to obtain from other medical men, this is practically non-existent. There are two classes of persons who might tend to become addicts. The first is the degenerate type who in most instances have always been degenerate and whose excesses are not confined to one drug. Little can be done for these, as the drug-taking is not the cause of their degeneracy but an accident in their life history. The second is even more rare, but he is usually one who suffered from sleeplessness which was ineffectively treated and, when at last he finds something which assures him of sleep, he holds to it in terror of ever again having to go through what he has suffered in the past. Sleeplessness quickly and effectively treated leaves no terrors behind, and I have always found it quite easy to stop the sedatives, even after they have been taken for several years.

I must apologize for the length of this letter, but the importance of the subject emboldens me to ask your indulgence.—I am, etc.,

London, N.W.1, May 20th. MAURICE CRAIG.

WEEDS, CANCER, AND ACIDITY.

SIR,—Some time ago I wrote a letter (BRITISH MEDICAL JOURNAL, August 28th, 1926, p. 405) suggesting a possible field of investigation into the cause and treatment of cancer. I pointed out that there might possibly be a similarity between the causation of weeds and that of cancer, and that the determining factor in the growth of certain weeds, such as plantains, daisies, etc., has been proved to depend on the alkalinity of soil, and that these weed seeds will not germinate in soils of a certain degree of acidity.

My letter has brought me communications from all over the world, and almost without exception the replies that I have received confirm my contentions.

On the other hand, one of the letters suggests that salt may be a cause of cancer, and the writer enclosed a pamphlet giving illustrations to support his theory, but his illustrations might be equally applicable to the absorption of an alkali, such as soap, through the skin.

The germination of the above-mentioned weed seeds is undoubtedly due to the application of alkaline manures to soil, and I suggest it is possible that the prevalence of cancer in man and not in animals may be due to similar causes. At any rate, this is a field of investigation which is worth while inquiring into.

When making tests of soil I have frequently noticed that my skin is markedly acid in reaction, but after washing, unless the soap has been thoroughly rinsed off, it is alkaline. I am not suggesting that people should not wash themselves, but simply that they should use clean water to rinse off the soap thoroughly.—I am, etc.,

Moor Allerton Lodge, Leeds, May 18th. A. MACKENZIE.

THE EPIGLOTTIS IN RESPIRATORY OBSTRUCTION UNDER ANAESTHESIA.

SIR,—Mr. H. Mortimer Wharry's account of the behaviour of the epiglottis in respiratory obstruction under anaesthesia (BRITISH MEDICAL JOURNAL, May 21st, p. 914) must evoke considerable interest among anaesthetists.

With the anaesthetic technique available at present, however, it would seem that certain points in the prevention and treatment of the condition call for some comment.

1. The possibility of laryngeal obstruction during the performance of any operation upon the throat can be ruled out by the use of endotracheal anaesthesia, and this method is applicable in all such operations with the exception of those actually involving the vocal cords.

2. In the treatment of laryngeal obstruction during anaesthesia, from whatever cause, the use of an efficiently illuminated direct vision laryngoscope and endotracheal catheter should surely supersede tracheotomy or laryngotomy. The catheter can be passed into the trachea more quickly than laryngotomy can be performed, and the patient thus spared the knowledge of any untoward occurrence during the operation, not to mention the imposition of an unnecessary wound in his throat.

3. In those cases where respiration has actually ceased, once the patency of the glottis has been restored, the exhibition of 10 per cent. carbon dioxide with oxygen will prove more efficacious than the use of oxygen alone.—I am, etc.,

London, W.1, May 21st. I. W. MAGILL.

SIR,—Mr. Mortimer Wharry, in my opinion, attaches too much importance to the action of the epiglottis. The text-books on physiology have long ago given up the theory that the epiglottis folds over the orifice of the larynx like a lid during deglutition or at any time during respiration. The orifice of the larynx is closed by muscular contraction of the aryteno-epiglottidean folds, and the whole larynx is drawn up against the base of the tongue by the neck muscles. The epiglottis has frequently been removed for lupus, tuberculosis, and other conditions, with absolutely no interference with deglutition; the saliva does not trickle into the larynx, and no cough is produced. The larynx is closed just as effectually without the epiglottis. This has been observed on many occasions by myself and others.

The function of the epiglottis is to direct air into the nasopharynx and promote nasal breathing. In the horse (and other dumb animals) the epiglottis passes up behind the soft palate, and the horse is essentially a nasal breather. In man, with the development of speech, the epiglottis has become vestigial and of less importance.

There is no muscular mechanism by which the epiglottis is made to act as a lid to the larynx, and even in the swallowing of a bolus of food the epiglottis is in close contact with, and overlapped by, the base of the tongue.

The falling back of the tongue and jaw is still the important cause of respiratory obstruction, particularly during the early stages of anaesthesia before relaxation has occurred. Mr. Wharry, in pulling the epiglottis forward, must of necessity pull the base of the tongue away from the larynx.—I am, etc.,

London, W.1, May 23rd. E. D. D. DAVIS.

THE CONSTITUTIONAL FACTOR IN DISEASE.

SIR,—Dr. Hurst has rendered good service in emphasizing the need for taking more interest in this subject. There are good reasons for thinking that if more attention were paid to the teaching of several of the past masters in medicine, and less attention to the results of highly specialized lines of investigation characteristic of modern times, important advances in practical medicine would be made.

I am sure Dr. Hurst will not misunderstand my attitude if I enter a caveat against the too hasty acceptance of the interesting views and recommendations which his researches have led him to make. I view with apprehension the day when "the brothers, sisters, and children of patients with the A.A.-S.C.D.-H.G. syndrome should be given test meals," and, "if they are found to have achlorhydria, they should, in common with everybody else in whom the condition is discovered, be advised to take a drachm or more of hydrochloric acid, fasting, in the morning and at lunch and dinner for the rest of their lives." This recommendation is apparently based very largely on the results of one investigation in which four out of one hundred students, regarded as normal, showed a condition of achlorhydria. A little reflection on this fact leads me to doubt the wisdom of founding on it a recommendation along the lines indicated.

My main reason in writing, however, has reference to the conclusion to which Dr. Hurst has been led from his experience of migraine. He states that "in migraine the usual stimulus is ocular, and a very thorough investigation in numerous cases under my care has invariably failed to reveal anything in the nature of alimentary toxaemia, hepatic insufficiency or a toxic idiopathy, which could be held responsible, in spite of the fact that on theoretical grounds these have frequently been suggested as the exciting cause of attacks."

My own experience of numerous cases leads me to an opposite conclusion. It would be interesting to hear from Dr. Hurst the precise nature of the tests which he applied, and the results which satisfied him that he could exclude an alimentary toxaemia as an important etiological factor in that disease.—I am, etc.,

Edinburgh, May 16th. CHALMERS WATSON, M.D.

TRAUMA AS A CAUSE OF AURICULAR FIBRILLATION.

SIR,—I never held the opinion imputed to me by Professor Hay (BRITISH MEDICAL JOURNAL, May 14th, p. 897) that fibrillation in itself is evidence of myocardial damage. As a matter of fact, I do not know a case of fibrillation in which there was no other evidence of a damaged heart. If trauma (overexertion) were able to induce fibrillation in a healthy heart one would expect to see a good many of these cases. Moreover, in my experience there is actually a pre-fibrillating stage recognizable in cases which subsequently develop auricular fibrillation. The characteristic feature of this stage is an exaggerated P (auricular wave) signifying enlargement of the auricle. The exaggerated P is not only found in mitral stenosis but also in other types of heart which subsequently develop auricular fibrillation. My main objection, however, to the statement of Professor Hay and his collaborator is based on entirely different grounds. We are told that the problem is of considerable practical importance because of its medico-legal bearing. Surely from this point of view the terms "apparently normal" and "ordinary methods of examination" are meaningless. From a practical point of view all that matters is: Can or cannot trauma induce fibrillation in a healthy heart? The authors say, "It is certainly true that myocardial damage or some toxaemia is generally present as a predisposing factor." It is therefore admitted on all sides that as a general rule fibrillation appears in conjunction with a damaged heart. As long as it is not proved that in a particular case of fibrillation the heart is healthy, or that trauma has actually induced fibrillation, we must assume that the case conforms to the general rule.

Now in four out of five cases on which the authors rely it has not been established that trauma actually induced fibrillation. The condition might have been there before. In Case IV there is some evidence that trauma has induced fibrillation; but in it there is conclusive proof that we are dealing with a damaged heart. There was a history of a heart attack some years before the trauma which the authors believe was fibrillation; and it is admitted by them that it was a case "predisposed" to fibrillation. (The term "predisposed" can only mean a damaged or abnormal heart in some way.) It is evident that the authors have not been able to produce a single case to support their thesis that trauma may produce fibrillation in a healthy heart.

The evidence that the hearts in these cases were healthy is based on an even more slender foundation. Professor Hay asks us to take it for granted that a case of fibrillation showing extra-systole (Fig. 1), relative preponderance of the left ventricle, slurring of R, etc., comes under the category of an apparently healthy heart! The authors have evidently not had a Wassermann test made in the majority of their cases in order to exclude syphilis. Again, it is repeatedly stated by them that the heart was "slightly enlarged." How pronounced must the enlargement be in order to justify the application of the term "unhealthy"? How do they know that fibrillation was the cause of this enlargement? In short, the authors have not produced evidence that the hearts were healthy, but, on the other hand, there is considerable evidence that they were damaged in some degree.

Professor Hay seems to lay great stress on experimental evidence. As is the case with "apparently healthy" and "ordinary methods of examination," the arguments used in this respect, if they are to hold good, will have to be considerably qualified. In the original paper dealing with the experiment (*Heart*, vol. vii, No. 4, p. 194) Sir Thomas Lewis and his collaborators induced fibrillation in an animal by means of electric stimuli, and the following quotation refers to after-effects; that means to the auricular fibrillation which continued after the stimuli had been withdrawn.

> "On many occasions there will be no after-effects; on very many other occasions there will be a short after-effect lasting a few seconds or perhaps a minute; on rare occasions an after-effect of not many minutes' duration; very rarely of thirty or sixty minutes will be seen."

Now it will be seen that Professor Hay and his collaborator in their paper are dealing with trauma which induces chronic persistent fibrillation. Clearly it follows from this experiment that trauma cannot produce chronic persistent fibrillation in a healthy heart, and it is invariably the tendency, even if fibrillation is produced in a healthy heart, for it to come spontaneously to an end within a short time.—I am, etc.,

Liverpool, May 18th. I. HARRIS.

A RISK OF LIQUID PARAFFIN IN CHRONIC CONSTIPATION.

SIR,—In a memorandum (May 14th, p. 876) Dr. Robert Gibson suggests that the administration of liquid paraffin for chronic constipation may lead to the production of cancer.

In view of the fact that many thousands of people are in the habit of taking paraffin as a daily routine, may I put forward some facts which appear to show that all the evidence is directly opposed to this somewhat disquieting suggestion?

The cancer-producing factor in tar and its derivatives and crude mineral oils—for example, Scottish shale oils and crude petroleum—has been the subject of much intensive and valuable research by Drs. Archibald Leitch, E. L. Kennaway, and others. Dr. Kennaway (*Journal Industrial Hygiene*, 1924, p. 462) has demonstrated:

1. That the cancer-producing factor is completely absent in all the known chemically pure fractions of these products.
2. That it is extremely improbable that the mere fact of continued irritation, in the ordinary sense of the word, is responsible for the production of cancer due to mineral oils or tar and its derivatives. For example, soot is not an irritant except in the sense of cancer-producing properties, while substances such as acridine, which are irritants in the ordinary sense, are quite innocent of cancer-producing power.
3. Since all the known pure derivatives of tar and crude mineral oils have been thoroughly tested on mice and found to be completely devoid of the cancer-producing property, Dr. Kennaway suggests that it is not unlikely that the cancer-producing factor is some quite unknown substance and is present in these substances in amounts as small as hormones or vitamins.

Hence if liquid paraffin is devoid of the cancer-producing factor before administration, it may be safely assumed that it will not acquire it during its passage through the human intestine.—I am, etc.,

London, W.1, May 19th. G. B. DOWLING.

THE ESSENTIAL OIL TREATMENT OF CHOLERA.

SIR,—In the article on the treatment of cholera by essential oils by Dr. Cannon in the issue of the JOURNAL of January 15th (p. 98), he appears to attribute the initiation of that method of treatment to Dr. Tomb. As a matter of fact, in an article by me (June 10th, 1922) I described this method for, I believe, the first time.

In that article I gave credit for the idea to a retired officer of the Public Works Department of India, who advised me about twenty-five years ago to try grated nutmegs and rum, which he described as a specific for cholera. He mentioned that he had got the idea from some other person who had found it useful also in dysentery and other bowel complaints. In this connexion I should mention that General Collins, A.M.S.(ret.), mentioned the use of cinnamon oil in enteric fever when, in June, 1916, I recommended to him the use of the essential oils—cloves and cinnamon particularly—in the treatment of cholera.

In my article I explained that I was, after succeeding with nutmegs and rum, led to use with great success, in the early stages of cholera, a mixture almost identical with that described as Dr. Tomb's. This formula I found given on bottles supplied for the past thirty or forty years by all the Government medical store depots, under the name "Pro-diarrhoea mixture." Shortly after the publication of my article I received, and answered, inquiries from Dr. Tomb regarding the method of administering the oils, etc. It was therefore a matter of surprise to me when nearly two years afterwards I received an official circular advising the use of these essential oils in cholera. The source of this advice was an article in a pamphlet of the Medical Research Council, which quoted Dr. Tomb's article on the subject in the *Indian Medical Gazette*, and, I think, an American medical journal (I write from memory).

So far, apparently, no credit has been given to the layman, whose name I cannot recollect, who thought of nutmegs and rum, nor to the medical man who thought of a scientific explanation of their action and pointed out that the use of certain more potent essential oils—for example, cajuput, cloves, and cinnamon—was even more effective in the treatment of this terrible disease.

I see that Drs. Tomb and Cannon further recommend the use of small doses of the essential oils as a prophylactic. They may prove beneficial in this respect, a point that can only be settled by fairly compiled statistics. Apart from the difficulty of their administration as a prophylactic, their use might divert attention from measures that have proved effective and practicable.—I am, etc.,

G. O. F. SEALY,
Lahore, March 24th. Lieutenant-Colonel I.M.S.

DISTRICT ORGANIZATION OF HOSPITALS AND POST-GRADUATE TEACHING.

SIR,—In the scheme for district organization of hospital facilities which has been foreshadowed by the Minister of Health it will be a pity if opportunities for post-graduate work are not considered along with the other aspects of the case.

In the undergraduate schools the teaching arrangements involve the co-operation and assistance of the students in the general work of the hospital, and this contributes in no small measure to the success of the hospitals. On a higher plane this relationship might still exist for qualified practitioners in relation to their local institutions

where these are not undergraduate hospitals. It is a commonplace that a doctor's education is never finished, and it may be taken for granted that there are few general practitioners but would admit their desire for a continued and close association with a teaching hospital.

The type of teaching that the post-graduate most needs is probably not the set lecture or course of lectures on various subjects, though these are good up to a point in the form of "refresher" courses; it is rather the team work of hospital life, with its interchange of knowledge and observation, its clash of ideas, and its inexhaustible supply of confidence, that is wanted. In this way our knowledge of medicine is first acquired and is assuredly most easily kept up. Yet it is this type of education which is, by our present methods, most difficult to come by once a man leaves his undergraduate hospital and goes out into general practice.

The undergraduate schools are, of course, always fully occupied. The post-graduate teaching hospitals are few, mostly small institutions, and probably some distance from him, and even in these, unless he can hold a clinical assistantship, he must swallow his pride and be treated like something between a medical student and a complete outsider. What I think he longs for, and needs, is the rights in a hospital which he had as an undergraduate, and to achieve these rights I think he would willingly undertake duties. It may be said that the general practitioner is a busy man, and has no time to undertake these further duties. I suspect that argument is fallacious; in any case, most of us can find time for the things we want to do, and I am convinced that many practitioners would welcome an opportunity of service in a local hospital.

There are other points, too: as regards panel practice, the State might reasonably expect and enable the doctors it employs to spend some of their time keeping abreast of modern medicine. Besides this, the panel doctor on his side undertakes to treat his sick patients, but if, for reasons of his or of theirs, they can be better treated in hospital, he sends them there. Is it unreasonable to suggest that he should follow them up and assist with their treatment in these institutions rather than wash his hands of them? I am speaking broadly, of course; it is not necessary that he should always follow his own individual cases, but rather that, in return for their treatment, he should give some part of his time (say as a clinical assistant) working in the hospital. In this way he would benefit himself, the patients, the institution, and medicine in general.

We talk about medical practitioners engaging in research, and the genius of Mackenzie has already, in a limited field, made this a reality; but we must beware of thinking too much of research in the sense of set investigations into individual subjects. The foundation of research is more in the nature of an atmosphere of knowledge and criticism, which every practitioner in his daily work adds to and tests. The set investigations come later, and the discoveries that we acclaim are more in the nature of copingstones selected and placed in position on an edifice already built. It is this mass and formation of knowledge that we need to strengthen if fruitful research is to go on down the ages, and it is by knitting together the doctors in and through their local hospitals that we shall best do it. What the actual rota of work would be, and how it could be used for the institutions, would be a matter for consideration. That such work can be successfully done is seen in the many cottage hospitals where the local practitioner takes his turn in carrying on the hospital work.

It is, however, in a reorientation of the Poor Law hospitals that the greatest opportunity would arise. In these institutions at present the vast amount of clinical material that they contain, though carefully treated, must remain largely uninvestigated, greatly to the loss of the patients, of the institutions themselves, and of the numerous practitioners close outside their walls.

What sort of arrangements for the district organization of hospital facilities will be made remains to be seen; that these are urgently necessary is sufficiently obvious, but unless the use of these hospitals for post-graduate teaching and for bringing practitioners into closer touch with institutional medicine is made part of the scheme of reorganization a great opportunity will have been missed,—I am, etc.,

London, W.1, May 17th. T. H. C. BENIANS.

INFLUENZA AND ALBUMINURIA OF PREGNANCY.

SIR,—Mr. R. H. Paramore (May 7th, p. 856) would have been more correct if, instead of stating that he is sorry I "will not allow that compression of the kidney is a cause of albuminuria," he had written "allow that compression of the kidneys is *the* cause of albuminuria in the cases under consideration"—which is all my letter implied.

Mr. Paramore's initial argument was definitely this—the albuminuria of the pregnant woman suffering from influenza must be due to compression of the kidneys, for, (1) only the pregnant woman is affected in this way, and (2) a "terrible" cough adds to the compression produced already by the pregnant uterus. If the compression theory is to be proved, both (1) and (2)—on which the theory is based—must also be proved. As I showed, neither fits in with clinical facts.

Mr. Paramore says that my statement that "nephritis follows influenza oftenest when there is no cough" is "an opinion to be confirmed." Of my last 8 cases of post-influenzal nephritis, 7 followed a very definite tonsillitis which I had observed myself. Any general practitioner who keeps records would probably support this. With reference to Mr. Paramore's objection that acute nephritis is very different from acute pyelitis, while admitting that the latter is more of an inflammatory nature than the former, yet I find that both types of case occur at the same seasons and are probably due to the same cause. For instance, I saw between November 3rd and November 18th, 1925, 3 cases of nephritis and 3 of pyelitis. All were due to influenza, and marked tonsillitis was observed in 4 of the cases. I saw but 11 cases during the year. I have had similar "runs" of these cases on other occasions. These were all healthy people, but I have 2 cases of endocarditis whose urine has been smoky during these seasons. One case of endocarditis has passed blood during each of the last three influenza waves. Surely these facts suggest some germ or toxin as the cause of the nephritis.

Mr. Paramore, however, will not admit that the "occurrence of . . . nephritis in the non-pregnant, without cough," affects the issue; "for it is by no means certain that these conditions are produced by toxins affecting the kidney." I fail to see how this statement helps the compression theory. He refers to "other forces beside cough," but does not specify them.

Some amusement seems to have been caused by my suggestion that accidental haemorrhage may have a connexion with influenza. I have some reason for hazarding the suggestion. If I remember rightly, Browne's recent work included some interesting experiments which showed that the nephritis produced by the coliform group of organisms was most potent in producing thrombosis and infarction of the placenta—the pathological findings in accidental haemorrhage. I remarked on the combination of the influenza toxin and the *B. coli* in my previous letter.

In addition, I have observed during the numerous epidemics of these later years that pulmonary infarction is most certainly a common complication of influenza, and I have evidence that embolism occurs in other organs as well. As already stated, the nephritis cases are probably embolic. In 2 of my cases of post-influenzal nephritis I observed, when the renal symptoms were clearing up, pulmonary infarction, which was followed by the spitting of the bloody-mucous sputa so characteristic of infarction. I have found that pregnant women also get pulmonary infarction during the influenza epidemics, and that the same—as well as pulmonary embolism—also occurs in puerperal women. This may account for the large number of cases of pulmonary embolism after childbirth recently reported in the BRITISH MEDICAL JOURNAL. I have seen 4 such cases since 1920. All this goes to prove that

influenza is potent in causing thrombosis and embolism, and from influenza to placental thrombosis and infarction may not be such a far cry as Mr. Paramore imagines.—I am, etc.,

AMBROSE W. OWEN, M.D., B.S.Lond.

Aberdare, May 10th.

"INFAMOUS CONDUCT."

SIR,—Has not the time arrived when it should be brought by the British Medical Association before the General Medical Council that an alteration should be made in disciplinary matters in the form of accusation against a registered medical practitioner? I allude to the term "infamous conduct in any professional respect." The public do not understand what is meant by "any professional respect." The public mind fastens only on the words "infamous conduct" against the accused.

In the navy and army the charge is "conduct unworthy of an officer and a gentleman." Why not in our profession a similar statement—conduct unworthy of a doctor and a gentleman? In the public mind the wording in the charge "infamous conduct" carries condemnation before the case is heard.—I am, etc.,

Bournemouth, May 10th. A. HUMPHRY DAVY, M.D.

POST-MORTEM EXAMINATIONS IN GENERAL PRACTICE.

SIR,—I was impressed by Dr. Orton's letter (May 21st, p. 939) advocating a scheme whereby the making of *post-mortem* examinations in general practice should become a specialty for one particular medical man in a county or other division of the country.

A general practitioner suddenly called upon to perform a necropsy is under a great disadvantage; *post-mortem* examinations are few and far between for him, and by reason of this, such a medical witness should not be expected to give an expert opinion on the cause of death when it is legally demanded for purposes of accuracy. There should also be considerations for the citizen, for the relations of the dead, and also for the doctor who performs the necropsy. It might be, and often is, that the only available place for obeying the coroner's warrant is in the kitchen of the deceased. As relations regard anything in the nature of a *post-mortem* examination with great distaste the general practitioner frequently incurs their displeasure, and also he submits himself to personal risk of infection when he works under cramped conditions.

Furthermore, is it fair for a man who is rendering most forms of medical service to the living to proceed to attend to them after doing a necropsy, where there may have been an acute infection of, say, streptococcus, which possibly, owing to the conditions under which he worked, he was unable to detect or even suspect?

I cannot go so far as Dr. Orton in his remarks on crime and the giving of certificates of death in obscure cases, but I agree with him that there should be a medical man well acquainted with pathology, and that such a person should undertake all the *post-mortem* examinations for a group of counties, and there should be proper facilities for such a pathologist to do his work.—I am, etc.,

Penmaenmawr, Carnarvonshire, May 23rd. I. H. LLOYD.

PROPHYLACTIC VACCINATION OF THE NEWLY BORN AGAINST TUBERCULOSIS.

SIR,—With reference to the letter of Dr. Major Greenwood, published in your issue of May 14th (p. 896), I desire to state that Dr. Biraud's statistical report was printed in my article precisely as received by me. I have informed Dr. Greenwood that the original reports of the medical men who have used B.C.G. vaccine since 1924, preserved in the Pasteur Institute, are open to the inspection of any authorized person.—I am, etc.,

Paris, May 21st. A. CALMETTE.

Obituary.

WAREN TAY, F.R.C.S.,

Consulting Surgeon, London Hospital, Royal London Ophthalmic Hospital, and the Hospital for Diseases of the Skin, Blackfriars.

WITH the death of Mr. Waren Tay there has passed away perhaps the last of the men in consulting practice in London who were first general surgeons, but with their general work combined the practice of ophthalmology. There were giants in those days who could excel in more than one branch of medicine. Tay was one of them. Jonathan Hutchinson was another. Tay and Hutchinson were close colleagues and collaborators both in clinical observation and in literary work. Although Tay did not attain the international reputation and fame that was Hutchinson's, yet he made no uncertain mark on ophthalmology. To this day we speak of "Tay's Choroiditis," those fine yellowish spots that appear in the macular region of the fundus of the eye, as one of the signs of senile degeneration; and the discovery of this characteristic lesion was but one of his observations. Besides attaining distinction in the practice of ophthalmology, Tay played no small part as a specialist in diseases of the skin. In his early days he translated into English several foreign medical works, and chief amongst them was Hebra's book on disease of the skin, published by the New Sydenham Society. He was assiduous as a clinician, holding several senior appointments at hospitals. He was first surgeon, and later consulting surgeon, to the London Hospital, where he had received his medical education; he was also surgeon to the Royal London Ophthalmic Hospital, both at the old hospital in Moorfields, and the new buildings in City Road; he was also on the staff of the Blackfriars Hospital for Skin Disease at Blackfriars, and the Queen's Hospital for Children in Hackney Road.

Many as were his hospital appointments, there was no one who was a more conscientious member of a hospital staff than Tay. At Moorfields he was always first at his desk in the out-patient room, and ready to begin seeing his many patients at the stroke of nine o'clock in the morning, thereby setting an example hard for his clinical assistants to follow, who perhaps envied him the short walk that brought him from his home in Finsbury Square to the hospital. He lived and practised in one of the fine old Georgian houses in the city square (now massive office blocks), where formerly were the homes of many consultants before the steady movement to the west of London. But he clave to his old abode until his retirement from practice, to a life of leisure and repose in Croydon, where he died on Sunday, May 15th, at the age of 84. As a man he was shy and retiring, but he had one of the kindliest and gentlest of manners. He was always patient and ready to help a neophyte to understand the intricacies of clinical technique. No trouble was too great for him to undertake. He would even suffer fools gladly, or at least we younger men sometimes thought that this was so.

He attained to the rank of Fellow of the Royal College of Surgeons of England in the year 1869, three years after he had become a Member. In the last issue of the *Calendar* of the College his name comes sixth in chronological order of Fellows, so that there are but five others of the old guard and of greater standing than he was at the time of his death.

N. B. H.

THE LATE PROFESSOR STARLING.

AT the meeting of the Académie de Médecine (Paris) on May 10th, the President, Professor Gley, paid a tribute to Professor E. H. Starling, who had very recently been elected a corresponding member. He spoke of his strength of mind, his upright character, his fine spirit, his passionate love for physiology, and his devotion to science. He was, Professor Gley said, a leader of men, who had taken a large part in the development of biology in his own country, and had worthily represented British physiology at international assemblies. His death would be as sincerely lamented by his French physiological and medical colleagues as by his English. At the annual general meeting

of the Lister Institute on May 18th, when Sir James Fowler was in the chair, a vote of condolence with Mrs. Starling was adopted. It recorded the great loss the Institute had sustained by the death of Professor Starling, who for twenty years had devoted to its interests his gifts of a rare ability and a capacity for whole-hearted sympathy with all engaged in the endeavour to promote the advance of science by research. His wise judgement had always proved a safe guide in the conduct of the Institute's affairs.

Dr. NEVILLE THOROLD WOOD, who died on May 14th, aged 69, received his medical education at St. George's Hospital and Paris. He obtained the diplomas M.R.C.S., L.R.C.P. in 1883, the M.R.C.P. in 1892, and graduated M.D.Durham in 1899. A colleague writes: Dr. Neville Wood, who belonged to an old Lincolnshire family and inherited property in that county, was never a very robust man, and, after qualifying, travelled extensively, part of the time as ship surgeon in the P. & O. Co. As a result of his travels he became no mean linguist, knowing French, Spanish, and German. He subsequently settled in Kensington and built up a good high-class practice. He had held the posts of president of the West London Medico-Chirurgical Society, and consulting physician to the Kensington Dispensary and Children's Hospital. Neville Wood will be chiefly remembered for his book on the British health resorts (1912). He had an extensive knowledge of the European waters and climates, and was an active worker in the Section of Balneology and Climatology of the Royal Society of Medicine, of which he became President in 1920. His book on the British health resorts was written in collaboration with a committee of the Section, and contains many articles on the British localities by first-rate authorities. It may be regarded as marking the first step in the co-ordination of the British spas and their recognition as a national asset. Had not his health given way five or six years ago he would doubtless have taken an active part in the post-war developments at the spas in England and in other countries, but his was the task of the pioneer. Men of a strong and determined character like Neville Wood are, inevitably perhaps, a little liable to the "lonely furrow." It is to his honour that in spite of physical weakness, his active and versatile intelligence asserted itself in bold initiation and persevering work.

Dr. SAMUEL EDGAR MARTIN, who died on May 10th, in his 76th year, received his medical education at Queen's College, Belfast, and the London Hospital. He graduated M.D., R.U.I., in 1874, and in the following year obtained the M.Ch. and the diploma M.R.C.S.Eng. In 1877 he was appointed medical officer of Newry Infirmary, from which he retired recently owing to failing health. He was consulting sanitary officer to the Newry Urban and Rural councils, one of the founders of the district nursing society, and a governor of Newry Intermediate School. He was a member of the Ulster Branch of the British Medical Association. Dr. Martin took great interest in Freemasonry, having joined in 1874 St. Patrick's Lodge, Newry, the premier Lodge in Ulster. He rose to be Senior Grand Warden in the Masonic province of Down. He is survived by five sons, four of whom have adopted the medical profession, and by three daughters, one of whom is a nurse.

Surgeon Lieutenant Commander GEORGE AUBREY, R.N., died of pleuropneumonia at Hong-Kong on May 9th. He was the youngest son of Mr. John B. Aubrey of Cowes, was educated at the Middlesex Hospital, took the M.R.C.S. and L.R.C.P.Lond. in 1917, and, after serving as house-physician at Middlesex Hospital, was gazetted surgeon lieutenant, R.N., in January, 1917. He became surgeon lieutenant commander in January, 1923, and had passed for surgeon commander. In May, 1917, he was posted to the monitor M.27, in which he had nearly two years' war service, receiving the medal. In 1919 he was sent to Malta hospital as a specialist in bacteriology and pathology; in 1922 he joined the battleship *Ajax* in the Mediterranean; in 1923 the submarine parent ship *Adamant*; in 1925 the surveying ship *Kellett*, and in 1926 H.M.S. *Tamar*, being also in charge of the dockyard hospital at Hong-Kong.

The following well known foreign medical practitioners have recently died: Dr. K. OOSAWA, emeritus professor in the medical faculty of Tokyo University, one of the first to introduce European methods into medical science in Japan, aged 76; Dr. KARL STARGARDT, professor of ophthalmology and director of the eye clinic at Marburg, aged 51; Dr. A. BEVEROCK, professor of neurology and psychiatry at Prague; Dr. MAX HESSE, extraordinary professor of dermatology at Graz, aged 41.

Universities and Colleges.

UNIVERSITY OF CAMBRIDGE.

AT a congregation held on May 20th the degree of Bachelor of Medicine (M.B.) was conferred on the Hon. C. B. Buckley.

Dr. T. R. Elliott, F.R.S., has been appointed an elector to the Professorship of Physiology until February, 1933, in the place of the late Professor E. H. Starling, F.R.S.

UNIVERSITY OF LONDON.

MEETING OF THE SENATE.

A MEETING of the Senate was held on May 18th, when it was announced that as the result of the semi-general election of members of the Senate the following have been appointed: by Convocation (medicine), Mr. W. G. Spencer, O.B.E., M.S.; by Royal College of Physicians of London, Dr. J. Fawcett; by Royal College of Surgeons of England, Mr. V. Warren Low, C.B., F.R.C.S.; by the Faculty of Medicine, Lord Dawson of Penn, G.C.V.O., M.D., and Mr. H. L. Eason, C.B., M.D., M.S.

Sir William Collins.

In connexion with the retirement of Sir William Collins from the Senate the following resolution was adopted:

> That Sir William Collins be informed that the Senate have learned with great regret of his decision not to seek reappointment on the termination of his period of office as one of the representatives of the London County Council on their body, and that they desire to place on record their high appreciation of the distinguished services which for so many years he has rendered to the University.

Chair of Dietetics.

With reference to the anonymous offer, already announced, of £10,000 towards the establishment of a chair of dietetics, Messrs. Wander have intimated their desire to contribute a similar sum to the same object.

The Bloomsbury Site.

An anonymous offer of £250 has been received as a contribution towards any preliminary expense involved in the preparation of a comprehensive plan for the development of the Bloomsbury site.

Appointments.

The following appointments were made: Mr. D. MacC. Blair, M.B., Ch.B.Glasg., to the University chair of anatomy at King's College, and Dr. G. S. Wilson to the University readership in bacteriology and immunology tenable at the London School of Hygiene and Tropical Medicine. The title of Emeritus Professor of Ophthalmic Medicine and Surgery at University College has been conferred upon Mr. Percy Flemming, M.D., F.R.C.S.

Exhibitions.

The Dunn exhibitions in anatomy and physiology have been awarded to Mr. K. M. Robertson, an internal student of St. Thomas's Hospital Medical School.

QUEEN'S UNIVERSITY, BELFAST.

THE Senate of Queen's University, Belfast, has decided to confer the honorary degree of Doctor of Science upon Sir Berkeley Moynihan, Bt., K.C.M.G., President of the Royal College of Surgeons of England, and upon Professor G. Elliot Smith, M.D., F.R.S., Professor of Anatomy in University College, London.

ROYAL COLLEGE OF SURGEONS OF EDINBURGH.

AT a meeting of the College held on May 17th, Dr. A. Logan Turner, President, in the chair, the following were admitted Fellows:

J. N. Adam, H. G. Armstrong, T. O. Chenoweth, A. L. Clowes, A. H. Coleman, K. A. Gilchrist, *M.C.*, A. C. Gillies, P. N. Gokhale, N. D. P. de V. Graaff, G. M. Gray, J. F. Hackwood, W. K. R. Hamilton, B. M. Johns, B. G. Kane, J. J. Kelly, H. Lewis, A. N. McMillan, B. T. Rao, M. S. Ross, R. R. Simpson, A. Sourasky, W. C. Wilson, Ruth E. Millar.

The Bathgate Memorial prize, consisting of bronze medal and set of books, was, after a competitive examination in materia medica, awarded to C. J. Poh and D. M. O'Flaherty, who obtained equal marks.

SOCIETY OF APOTHECARIES OF LONDON.

THE following candidates have passed in the subjects indicated:

SURGERY.—P. V. Bamford, F. W. Crossley-Holland, P. F. Fanaken, S. Goldman, H. M. de Hartog, G. L. McDermott, E. H. Roberts, V. K. Samy.
MEDICINE.—P. Brookes, J. H. Gillatt, A. W. Marsden, W. D. Neill, E. H. Roberts, V. K. Samy, S. le R. Switzer, T. de L. Walker.
FORENSIC MEDICINE.—T. M. Beattie, P. Brookes, J. H. Gillatt, W. Howard, A. W. Marsden, E. H. Roberts, D. D. Stidston.
MIDWIFERY.—G. Danby, J. A. Fernandez, A. W. Lassowsky, M. H. Rashwan, E. A. Stroud, L. D. Williams.

The diploma of the Society was granted to Messrs. P. V. Bamford, P. Brookes, G. Danby, J. A. Fernandez, J. H. Gillatt, W. Howard, A. W. Marsden, W. D. Neill, V. K. Samy, and L. D. Williams.

Medical Notes in Parliament.

[FROM OUR PARLIAMENTARY CORRESPONDENT.]

THIS week the House of Commons made further progress with the Committee stage of the Trade Disputes and Trade Unions Bill, in the course of which references were made to "boycotts" by medical men. Inquiries are being made to ascertain whether the position of the medical profession is covered by the words "trade or industry" in Clause 1 of the bill.

On Tuesday the Prime Minister announced to the House of Commons that the Government had decided to sever diplomatic relations with Soviet Russia.

The address by Lord Dawson of Penn to members of Parliament on the use of animals in experiments has been postponed owing to pressure of other parliamentary business.

International Labour Conventions.

Brief mention was made last week of the debate raised in the House of Lords, on May 17th, by Lord Arnold, on the use of white lead paint. The statement made for the Government by Lord Cecil of Chelwood as to the obligation of the Government to ratify international labour conventions was important. Lord Arnold had pointed out the two aspects the subject assumed—the technical and the moral. While it was true that a vote for a Draft Convention was not constitutionally binding until the Convention had been ratified by Parliament there was a moral obligation to honour the vote given by its delegates, unless, possibly, circumstances altered very materially after the vote had been given. In the case of the Draft White Lead Convention not only had the Government not ratified, but it had passed an Act to do exactly the opposite of what the Convention, approved by ninety delegates from thirty countries, had laid down. What wonder, when this is done, that someone resigns! Countries would say quite properly: What is the good of sending delegates and technical advisers, at great expense, to try and raise the standard of the workers if, after attaining agreement, the vote really carries no obligation at all? There was reason to fear, if this danger was not recognized, that the pernicious effect would react on treaty obligations of the League of Nations itself.

Viscount Cecil (Chancellor of the Duchy of Lancaster), who replied, described the differences in the machinery for negotiating international conventions of the League and international labour conventions of the International Labour Office, which is a branch of the League. In the latter case the technical obligation, as laid down in Article 405 of the Treaty of Versailles, is to "bring the Draft Convention before the authority or authorities within whose competence the matter lies, for the enactment of legislation or other action." In this respect, therefore, it differed from a treaty obligation seeing that the only technical duty is to present it to Parliament. As to the moral obligation, he agreed with Lord Arnold that it was not right that a Government at home should ignore altogether the action which its representative had taken in an international assembly and treat his vote, as representing the Government, as of no account at all. "Personally, I think it a very unfortunate thing when it becomes necessary, not only in this case but in any case, for a Government to take a different view from that which is taken by its representative. . . . It gives an impression of infirmity of purpose and vacillation. No one who has had, as I have, to discuss similar topics before international assemblies since these events took place can have failed to feel that the unfortunate circumstance . . . does to some extent weaken the position of the British representatives who are discussing similar matters before international assemblies. It is obvious that it does."

The debate was continued by Viscount Burnham, who said that but for the steady sympathy and support of this country it was doubtful whether the International Labour Office would be in existence; by Lord Parmoor, who considered that there was a strong moral obligation on this country to go forward with ratification; and by Lord Arnold, who thought that the speech of Lord Cecil was a great advance on the previous position taken up by certain members of the Government.

"Trade Unionism" and Medicine.

During the debate on the Trade Unions Bill, on May 23rd, Mr. Lawson said that anyone who had acted towards the medical profession as Mr. Spencer, the Labour member for Broxtowe, had acted towards the Miners' Federation, would have been driven out of the profession. There was the case of Dr. Axham, which had attracted great attention in the press and among the public, but the British Medical Association, despite public opinion, persisted in its action toward that gentleman. In mining districts, where it was considered that the medical service was not as good as it ought to be, arrangements had been made locally to appoint doctors who were given better salaries than they got elsewhere and better instruments, but in every case the British Medical Association had intervened to prevent these men practising.

Dr. Vernon Davies: Do I understand the hon. member to say that the British Medical Association have definitely threatened these men, or that they have simply offered advice to them not to undertake the work?

Mr. Lawson replied that these professional men had been "advised." They had been brought down to meet representatives of the British Medical Association in the country. They had put their case and defended themselves, and there was not a single case where they had not been driven out and intimidated.

Dr. Vernon Davies said that Mr. Lawson seemed to be suffering under some slight misapprehension in his remarks concerning the British Medical Association. That Association was not a trade union, it was a voluntary combination of certain medical men, but there was no compulsion upon any man to join. He had been a member of the Association ever since he went into practice and had sometimes been opposed to its policy. In that House he had voted against their policy on committees, and yet he had not been penalized in any way, threatened, or interfered with. He had given his point of view and said that, as he believed the Association was wrong, he should vote against them, and he had done so and had not suffered. Cases were mentioned where the British Medical Association had interfered with certain appointments. All that the British Medical Association did was this. They said, "We are an Association of medical men out to protect the interests of the medical men and the public. We think a certain job is worth a certain amount of money. This particular society or company is advertising a job at a rate of remuneration which we think is too low. If you accept it you will be very foolish, because if you stick out you can get more." Suppose a man took it, nothing was done to him. All that the British Medical Association did was to say, "You are satisfied with a lower rate; we cannot interfere, we cannot penalize you, and we cannot turn you out of the Association, nor can we advise anybody to have nothing to do with you."

Mr. Lawson: They drive him out.

Dr. Davies: Not at all; that is where hon. members make a mistake. All that the British Medical Association does is to say, "You are foolish if you are prepared to work for a lesser wage," but it cannot, and does not, penalize that man in any shape or form.

Colonel Watts-Morgan asked Dr. Davies to take it from him that he could give him the case of four doctors who had accepted appointments and had been boycotted by all the medical men in the district, who had refused their assistance in operations and in cases in hospitals. If that was not intimidation, heaven knew what intimidation was!

Dr. Davies said that he was referring to the British Medical Association. It might be that the local doctors considered that a man who accepted this appointment was doing what would bring down the rates of remuneration, and they might say, "We do not approve, and, socially, we will not meet you." But, professionally, they were bound to meet him. If any doctor refused to assist his professional brethren who might request consultation he would not receive the backing of the British Medical Association or of any medical man.

Small-pox.

On May 23rd Sir K. Wood told Captain Garro-Jones that the Minister of Health was of opinion that local authorities had all the necessary powers to safeguard the population from small-pox if adequate use were made by the public of the facilities provided for free vaccination. Further cases had occurred in the Hackney Wick area. The Minister was unable to say when the inhabitants would be free from the danger of infection. Captain Garro-Jones asked if the question of overcrowding would be considered in connexion with preventive measures. Dr. Vernon Davies inquired if Sir K. Wood was aware that overcrowding would not cause small-pox. Sir K. Wood: Yes. Mr. Chamberlain, on May 23rd, said that nine small-pox patients (one male and eight female), whose homes were in the urban district of Hendon, had been removed to hospital. One patient was 8 days old, and the others were aged 8, 15, 16, 21, 23, 37, 42, and 47 years respectively. There were five fatal cases. At the time of infection four of these were unvaccinated and one vaccinated. Of the non-fatal cases, two were unvaccinated and two vaccinated at the time of infection. The vaccinated cases were all vaccinated only in infancy.

He was not aware of any special circumstances which contributed to the fatal results. The source of infection had not been traced.

Sir John Gilmour stated that in the year ended April, 1927, the only locality in Scotland where small-pox cases were notified was Dundee; sixty-one cases were notified there.

Mr. Chamberlain could not say how many of the 694,563 children born in England and Wales in 1926 had been vaccinated, nor could he give the cost of treatment of the 12,922 cases of small-pox notified during the year ended April 2nd last. Save in the case of patients who were suffering from the disease on entering the country, no part of this cost fell on the Exchequer. The cost of public vaccination was approximately £175,000 in 1925-26. Answering Mr. Briant, Mr. Chamberlain said he could not yet say when a report would be issued from the committee appointed to inquire into the methods which are available to diminish or remove any risks which may result from vaccination. Mr. Briant, in his question, described this committee as "appointed to consider the question of post-vaccinal encephalitis."

Shop Acts, 1920 and 1921.

On May 18th the committee which is inquiring into the working of the Shop Acts, 1920 and 1921, heard evidence from Mr. G. A. Foan, on behalf of the Hairdressers' Trade Parliamentary Committee. He said that the long hours of labour before the war affected the health of those engaged in the trade, and it was reported in 1914 that one out of every five hairdressers died of consumption. Since the earlier evening closing there had been a perceptible improvement in the health of the personnel of the trade, but even now they were employed for one hour a day later and longer than the majority of shop workers.

Evidence on behalf of the Retail Pharmacists' Union was given by Mr. H. J. Martin and Mr. G. A. Mallinson. The latter said that chemists had to wait for the evening consulting hours of the doctors. Closing hours of 7 or 8 would not fit the pharmacists, because the doctors did not consult until between 6 and 7, and the chemists had to dispense after that. Mr. Martin said that there was no necessity for a later closing hour on Saturdays than on any other night. Doctors did not make a point of seeing many patients on Saturday nights. The witness added that in most towns there were sufficient chemists living on their premises to provide a service of medicine required after regular hours.

Mr. Mallinson explained that if a chemist was on the national health insurance panel then, even if he did not live on the premises, a notice was posted up showing where medicines could be obtained when the shop was closed.

Replying to further questions as to how the public could get medicine in cases of emergency, Mr. Martin said it must be borne in mind that the doctors knew where the service could be got. The Chairman: Where the surgery hours close at 7, is there sufficient time for a member of the public to get his prescription made up before the chemists' closing hour at 8?—Yes, generally speaking. Witness added that he had never heard of any complaints that the closing hours of chemists, so far as prescriptions were concerned, were too early. No complaints on the subject had been made to the union, nor, so far as he was aware, to the Minister of Health on that subject.

A Vaccination Bill.

Mr. Groves presented, on May 18th, a bill "to amend the law relating to compulsory vaccination." This bill, which is supported by other Labour members, proposes to repeal the compulsory clauses of the Vaccination Acts. No time is available for its discussion this session.

The Policy of the Dental Board.—On May 24th Sir K. Wood, in reply to Mr. Hore-Belisha, said that the real balance of the Dental Board, including the invested general reserve fund, was £20,750. The Minister of Health was informed that the main items of the board's expenditure were grants in aid of dental schools, bursaries to dental students of limited means, and research. The board was not under any statutory obligation to spend money for the benefit of any class, but the Minister was informed that since the formation of the board bursaries awarded to sons of "dentists 1921" had amounted to approximately £10,000, and the sum of £3,850 had been spent on lectures and demonstrations for their benefit. In addition, over £10,000 had been allocated to dental health propaganda and £23,000 to research. "Dentists 1921" participated in the benefit derived from expenditure in these two directions in proportion to their numbers.

Invaliding for Rheumatic Heart Disease.—On May 23rd Dr. Vernon Davies asked the Secretary for Air if any, and how many youths under 21 had been invalided out of the Air Force during the past seven years for which statistics were available, for heart disease, the result of rheumatism during their period of service. He also asked similar questions of the First Lord of the Admiralty and the Secretary for War. Sir Samuel Hoare said that to furnish the statistics asked for would entail the scrutiny of a large number of records, and he did not think that the time and labour involved would be justified. Lieut.-Colonel Headlam said that the officers and men under 21 years of age, invalided from the Royal Navy and Royal Marines during the years 1921 to 1925, for organic heart disease numbered 111 in 1921, 67 in 1922, 23 in 1923, 28 in 1924, and 34 in 1925. It was not known how many of those invalidings were the result of rheumatism, and to ascertain the number would involve a considerable expenditure of time and labour, which would not appear to be justified. Captain King, for the War Office, expressed regret that he was unable to give the information asked for by Dr. Davies, which could only be obtained by examination of the documents of all men invalided during the period. Dr. Davies called Captain King's attention to the statistics given by Lieut.-Colonel Headlam, and asked if the War Office could not prepare its figures in a more get-at-able form. Captain King: I listened carefully to the Admiralty answer, and I noticed that it did not give the information for which the hon. member asked.

First Aid and Safety First.—On May 23rd Colonel Ashley told Dr. Vernon Davies that he had no powers to provide first-aid outfits on the roads of the country in case of accidents. In reply to Dr. Vernon Davies, Sir William Joynson-Hicks said every recruit entering the Metropolitan Police had to secure a certificate of proficiency in first aid. About 90 per cent. of the force possessed certificates. He added, in answer to Mr. Sexton, that the chief inspector of factories reported that the regulations for the provision of ambulances and first-aid appliances at docks were now well observed. No increase of inspectors under the dock regulations could be considered at present. The factory department had taken up with employers' and workers' representatives the question of establishing "safety first" organizations at the ports. He hoped for early practical results.

International Conference on Hydrophobia.—Mr. Chamberlain, on May 23rd, said that the Ministry of Agriculture was represented at the International Congress on Hydrophobia, in Paris, by Dr. W. H. Andrews, the Medical Research Council by Captain S. R. Douglas, and the Ministry of Health by Dr. W. M. Scott. In addition, six representatives attended from British institutes overseas at which antirabic work was specially important. The only expenses entailed to the public funds were travelling and subsistence allowances on the ordinary scale for the three delegates from Great Britain.

Protection Against Gas Attack.—On May 24th Mr. Baldwin told Mr. C. Wilson that the problem of protecting the civil population against gas attack was being closely studied, both in its technical and its non-technical aspects. He could not at the present time particularize the steps taken further than to say that they were directed to securing, in the first place, the provision of an adequate personnel suitably equipped and trained in protective measures, and, secondly, the dissemination at the proper time of full information in regard to the best methods of self-protection.

Deaths from Accident Among Miners.—On May 24th Colonel Lane-Fox informed Mr. F. Hall that during 1925 the death rates from accidents per 1,000 persons employed in mines under the Coal Mines Act in the principal districts were: 1.23 in Scotland, 1.52 in Northumberland (including 38 deaths caused by an irruption of water at Montagu Colliery), 0.75 in Durham, 0.84 in Yorkshire, 1.04 in Lancs, Cheshire, and North Wales, 0.83 in Derby, Notts, and Leicester, 0.84 in Stafford, Salop, Worcestershire, and Warwickshire, 1.25 in South Wales and Monmouth, 1.14 in other English districts, and in Great Britain 1.02. Deaths from diseases scheduled under the Workmen's Compensation Act, which in 1925 numbered 3, had no appreciable effect on the figures.

Research on Vitamins.—On May 24th Mr. Chamberlain, in answer to a question, said investigations of fundamental importance had been made recently in the National Institute for Medical Research at Hampstead, where the production of a vitamin of intense potency had been effected by the action of light upon a known chemical substance in pure form. He was glad to be able to say that this country continued to take the leading position in vitamin research, which it had held throughout. He was informed that much important work upon the various vitamins, including that already mentioned, was in progress in various laboratories, and in large part with the support of public funds administered by the Medical Research Council.

Sodium Silicate to Prevent Plumbo-Solvency of Water.—Sir K. Wood, on May 24th, informed Mr. Morris that the Minister of Health was aware that the process of adding sodium silicate to soft water in order to prevent the solvent action of the water on lead pipes had been adopted in a few districts, mainly on an experimental scale. The quantity of sodium silicate used was so small that the proportion in the treated water was much less than that contained in many natural waters used for domestic supplies. The results of the treatment were being carefully watched, and, upon the information so far available, there appeared to be no reason to apprehend any danger to health or any diminution in the wholesomeness of the water.

Notes in Brief.

Mr. Chamberlain states that from the inception of the National Health Insurance Act till the end of 1926 there were paid in England and Wales, for sickness benefit, £90,000,000, for disablement benefit £31,000,000, for maternity benefit £18,000,000, and for additional treatment benefits £4,500,000. He is not yet able to make any statement regarding the recommendation of the Royal Commission on National Health Insurance that benefit should be extended to include a consultant and specialist medical service.

Mr. Chamberlain says that no case has been established for reconsidering the grant made by the Ministry of Health for the maintenance of patients in asylums.

The inquiry by a special inspector of the Home Office into the incidence of lead poisoning in potteries is in progress. It cannot be completed for some little time.

Medical News.

A JOINT meeting of the Guildford Branch of the British Medical Association and the Royal and Southern Counties branches of the National Veterinary Association was held on May 19th, at the Royal Surrey County Hospital, Guildford, when Professor Hobday opened a discussion on clean milk, in which he recommended the appointment of special boards to deal with milk inspection; these should include the medical officer of health, a veterinary officer of health, and a sanitary inspector. Dr. Nathan Raw said that 10 to 12 per cent. of the milk samples examined contained tubercle bacilli, and that pasteurization was, therefore, necessary at present. Dr. Howell, medical officer of health for Hammersmith, agreed that, owing to the present uncertain condition of milk production, pasteurized milk was the cleanest and safest.

THE ninth Carlsbad international post-graduate course in balneology and balneotherapy will be held from September 18th to 24th. Among others, Dr. H. H. Dale, F.R.S., will deliver a lecture on the theory of insulin action. The course is open to all medical practitioners, for whom full opportunities for studying the local therapeutic institutions will be provided. In connexion with the course a Czechoslovakian visa will be supplied without charge and a 33 per cent. reduction allowed on the State railways. Further information may be obtained from the honorary secretary, Dr. Edgar Ganz, Carlsbad, Czechoslovakia.

THE April issue of *The Fight Against Disease*, the journal of the Research Defence Society, contains an account of Lord Lister's evidence before the Royal Commission on Vivisection in 1875, and his letter to Queen Victoria in the same year. Sir Berkeley Moynihan's recent broadcast speech about Lister is printed, and there is a reprint of the account in the BRITISH MEDICAL JOURNAL of April 9th of the conference with reference to the Dogs' Protection Bill held at the House of the Association. The methods and menace of antivivisection are described, and a short reference is made to the benefits which experimental research has brought to animals. The subscription for membership of the society is 10s., and further information may be obtained from the secretary, Dr. G. P. Crowden, at the offices of the society, 11, Chandos Street, W.1, who will also supply copies of *The Fight Against Disease*, price 6d. net.

A PARTY of 120 members of the Inter-State Post-Graduate Assembly of North America will visit London from June 1st to the 3rd. A series of lectures has been arranged at Dartmouth House on the mornings of the three days, and in the afternoons special demonstrations have been arranged at several London hospitals. Receptions will be held at the Royal College of Surgeons, at 5.30 p.m., on June 2nd, and at the Royal Society of Medicine, at 8.30 p.m., on June 3rd.

THE Council of the Medical School, medical women, and medical women students are arranging a fair at the London (Royal Free Hospital) School of Medicine for Women, 8, Hunter Street, Brunswick Square, W.C.1, in aid of the Centenary Fund of the Royal Free Hospital. It will be opened on Friday, June 10th, by Lady Rayleigh, O.B.E.

THE Fellowship of Medicine announces that on May 30th, at 2 p.m., Dr. A. S. Woodwark will deliver a lecture on diabetes at the Royal Waterloo Hospital, and on the same date and at the same hour Mr. W. McK. McCullagh will give a special demonstration at the Samaritan Hospital; the lecture and demonstration are free to medical practitioners. There will be a series of demonstrations during June at the Royal Eye Hospital, the first of which will be given on June 9th, at 3 p.m., by Mr. Letchworth. The Chelsea Hospital staff will hold a special course from June 8th to 21st, including operative technique and lectures on the diseases of women. From June 8th to 29th there will be an afternoon course at the Central London Ophthalmic Hospital and an operative course will be arranged if desired. From June 13th to 25th a combined course in diseases of children will be held at the children's clinic, the Royal Waterloo Hospital, the National Hospital for Diseases of the Heart, and the Royal National Orthopaedic Hospital. An afternoon course has been arranged at the Blackfriars Skin Hospital from June 20th to July 1st; special cases of interest will be shown on each Tuesday. The Victoria Park Hospital will provide a special course from June 27th to July 9th. The Fellowship of Medicine can arrange for practical courses in anaesthetics and obstetrics and for clinical assistantships in gynaecology. Copies of all syllabuses are obtainable from the Secretary of the Fellowship, 1, Wimpole Street, W.1.

A POST-GRADUATE course on the plastic surgery of the face will be given at the St. Louis Hospital, Paris, from June 15th to July 13th, by Dr. Ferris Smith of Grand Rapids and Dr. Eastmann Sheehan, of New York. The course, which will be given in English, will include lectures, clinical work, and practical instruction in operations on the cadaver. As the entry is limited early application should be made to Professor F. Lemaitre, St. Louis Hospital, 40, rue Bichat, Paris, from whom further information may be obtained. At its conclusion Dr. Chevalier-Jackson will commence a complete course on broncho-oesophagoscopy at the Paris Faculty of Medicine.

The house and library of the Royal Society of Medicine, 1, Wimpole Street, W.1, will be closed on Saturday, June 4th, and Monday, June 6th.

THE May issue of the *Tropical Diseases Bulletin* contains an historical section dealing with early records of research in tropical medicine, including Portuguese contributions in the fifteenth and sixteenth centuries, and ancient reports of plague, malaria, dysentery, leprosy, and scurvy.

LIEUT.-COLONEL JAMES CRAN, M.D., O.B.E., V.D., Principal Medical Officer, has been appointed an official member of the Legislative Council of the Colony of British Honduras.

THE seventh annual Congress of German Oto-Rhino-Laryngologists will be held at Vienna from June 2nd to 4th.

THE nineteenth French Congress of Medicine will be held in Paris from October 10th to 13th under the presidency of Professor Teissier. The subjects to be discussed include the symptomatology of the medical septicaemias; the pathology of the oedemas; and the medical indications and therapeutic value of splenectomy. Further information can be obtained from the general secretary, Dr. M. Chiray, 14, rue Pétrarque, Paris XVI^{e}.

IT was reported to a recent meeting of the Standing Committee of the Office International d'Hygiène Publique that leprosy, which for a number of years had been declining in Bosnia and Herzegovina, is now increasing. In Korea, where there are three or four thousand lepers, treatment with the fatty esters of chaulmoogra oil has produced some results. The curious circumstance was disclosed that three cases of indigenous leprosy have recently been detected in Switzerland. The patients lived in a high lonely valley, which can only be reached on mule-back, and had never been away from home. It is conjectured that some old focus of infection has revived.

THE second part (E–L) of the sale catalogue published by *L'Art Ancien*, Lugano, of early books on medicine, natural science, and alchemy has recently appeared. Each entry is accompanied by an explanatory or historical note in English, and the text is freely interspersed with contemporary woodcuts.

A THREE weeks' summer holiday cruise is being arranged by the *Bruxelles Médical* to leave Havre on August 10th and visit Bordeaux, Lisbon, Tangiers, Algiers, Palma, Barcelona, and Marseilles. The cost will be from £16 upwards; further information may be obtained from Dr. F. F. Imianitoff, 29, Boulevard Adolphe Max, Brussels.

THE number of persons attacked by rabies in 1924 in Germany was 41. It was 63 in 1923, 101 in 1922, and 52 in 1921. Deaths from rabies after inoculation numbered 8 in 1921 (1.44 per cent. of those bitten), 9 in 1922 (0.43 per cent.), 6 in 1923 (0.55 per cent.), and 5 in 1924 (0.34 per cent.), while the deaths among the non-inoculated were 4 in 1921 (8.01 per cent. of those bitten), 9 in 1922 (10 per cent.), 10 in 1923 (22.22 per cent.), and 5 in 1924 (2.36 per cent.).

THERE are at present 32,000 medical practitioners in Italy; 800 medical students become qualified annually.

PROFESSOR EUGEN FISCHER, the well known anatomist of Freiburg, has been appointed director of the Kaiser Wilhelm Institute for Anthropology at Berlin, which is to be opened in September on the occasion of the International Congress on Heredity.

AN institute for the study of tuberculosis has been founded in the Hamburg-Eppendorf General Hospital.

THE Chinese Physiological Society has established a new quarterly periodical entitled the *Chinese Journal of Physiology*, under the editorial direction of Drs. R. K. S. Lim, B. E. Read, and Hsien Wu of Peking, and H. G. Earle of Hong-Kong. The first number, January 1st, 1927, contained papers on the pharmacology of Chinese aconite, the use in anaesthesia of mixtures of ephedrine and procaine, observations on the secretion of the transplanted stomach, and reports of investigations of Chinese pharmacological products. The April issue is larger and includes twelve reports of physiological, pharmacological, and biochemical investigations. The articles appear in English, French, or German, with abstracts in Chinese. The journal may be obtained from the Peking Union Medical College; the annual subscription is £1 2s. 6d.

THE Bureau of the Far East at Singapore reports that for the week ending April 16th there were 18 cases of plague with 16 deaths, 213 cases of cholera with 178 deaths, and 600 cases of small-pox with 241 deaths.

Letters, Notes, and Answers.

All communications in regard to editorial business should be addressed to ***The EDITOR, British Medical Journal, British Medical Association House, Tavistock Square, W.C.1.***

ORIGINAL ARTICLES and LETTERS forwarded for publication are understood to be offered to the BRITISH MEDICAL JOURNAL alone unless the contrary be stated. Correspondents who wish notice to be taken of their communications should authenticate them with their names, not necessarily for publication.

Authors desiring REPRINTS of their articles published in the BRITISH MEDICAL JOURNAL must communicate with the Financial Secretary and Business Manager, British Medical Association House, Tavistock Square, W.C.1, on receipt of proofs.

All communications with reference to ADVERTISEMENTS, as well as orders for copies of the JOURNAL, should be addressed to the Financial Secretary and Business Manager.

The ***TELEPHONE NUMBERS*** of the British Medical Association and the BRITISH MEDICAL JOURNAL are *MUSEUM 9861, 9862, 9863,* and *9864* (internal exchange, four lines).

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MEDICAL SECRETARY, *Mediocra Westcent, London.*

The address of the British Office of the British Medical Association is 16, South Frederick Street, Dublin (telegrams: *Bacillus, Dublin*; telephone: 4737 Dublin), and of the Scottish Office, 6, Drumsheugh Gardens, Edinburgh (telegrams: *Associate, Edinburgh*; telephone: 4361 Central).

QUERIES AND ANSWERS.

MR. F. PEARCE STURM, aural surgeon to the Leigh Infirmary, Lancashire, wishes to consult the English translation of Alexander's *Diseases of the Ear in Children*, but cannot find it in any library. He asks for information.

INCOME TAX.

Deduction for House, etc.

"R.A.M.C.(RET.)" expends £150 in rent and rates, keeps one servant at £50, and uses two rooms (and apparently the garage) for professional purposes; he bought his car six years ago for £250 and is about to replace it at a net cost of £85; he expended £50 on instruments when he began civil practice a year ago.

*** The only safe test as to the amount to be deducted in respect of the house is that it should be reasonable. Assuming that the professional rooms are on the ground floor, we should suggest something between £50 and £75, but it depends on the size, etc., of the house. A somewhat similar proportion should be taken of the cost of the servant, including therein her food, laundry, etc. The amount deductible for the renewal of the car will be £85, or the value of the car when taken into use for the practice a year ago, whichever is the less. No allowance is due for the £50 expended on the provision of the stock of instruments; repairs and renewals will; of course, be deductible.

Motor Car Allowance.

"A. C. R." is informed by his local inspector of taxes that when he claims an allowance for the cost of his car, either by way of depreciation or cost of renewal, it will be necessary for him to produce "accounts" supporting his return.

*** It is, of course, understood that when a special allowance is claimed the Revenue officials have some ground for wishing to have evidence to show that an equivalent allowance has not already been given in one form or another, but the production of accounts hardly seems to be the only way of proving that fact. At the same time the request is one which is difficult to refuse; it is not possible to make an accurate return unless the gross receipts are known and the expenses calculated in detail, and, after all, the inspector is apparently only asking for a copy of statements that *ex hypothesi* have already been prepared.

Expenses.

"W. C. B. S." draws a pension and has bought a share in a partnership, paying his own drug and motor expenses; he asks what deductions he can claim.

*** The pension will, of course, be dealt with by the Government Paymaster, and it should be shown separately in the statement of total income. The partnership income will be included as part of the assessment on the practice as a separate unit, and the necessary joint return will be made by the senior partner. It may be that our correspondent's share will have to be computed wholly or partly according to the earnings of his predecessor—for example, if he bought his share after April 6th, 1926, he will not yet have a full past year's earnings to declare. When it becomes necessary to calculate his own profits for the purpose of the return he should deduct *inter alia* a reasonable sum for professional use of his house, running expenses and depreciation of car, cost of drugs used, telephone, etc. No doubt his colleagues will collaborate with him in this, in view of the necessity for the joint return.

LETTERS, NOTES, ETC.

TRAPS FOR THE UNWARY.

"NEVERMORE" writes: Medical men are not, as a rule, conversant with the many traps that they are liable to fall into in dealing with the numerous circulars they receive through the post. The suspicious nature of some at once put one on guard. But I have been victimized on two occasions, and I should like to warn others.

Some time ago I received a circular pointing out that in the event of a fire occurring on one's premises it would be very difficult to make a claim unless one had a complete schedule of the contents of the house. In response to my inquiry an agent called on me and we discussed the matter, and it appeared that their charge was based on the amount of the valuation, being 1½ per cent. He suggested that my valuation was probably about £500, and I agreed to have it done, as I thought it would cost me about £5 or £6. A very polite man took two or three days to go over the house, and as a result the total amount was said by him to be £1,500. My bill, therefore, came to over £18, instead of £5 or £6! I refused to pay this amount, and eventually paid £10 to settle.

My next experience was an offer I received from a firm holding themselves out as brokers in connexion with Stock Exchange dealings. They sent me a very full account of the rosy prospects of certain companies in which I could buy shares. I need not put down the whole amount of the purchase money, but I could pay a small amount on each share, and this would give me an option on the shares for three months, or a longer term if arranged. As one of these companies was one that I much fancied, I paid £20 for an option on 200 £1 shares for three months. My impression was that if at the end of the three months the shares were higher than when I bought them, I should get the profit and my £20 back, and if, on the other hand, the shares were lower, I should pay the loss and get my £20 back, or what was left of it. Unfortunately the shares at the end of the three months were exactly the same price as when I bought my option. I received a letter stating that my option was closed and they retained my £20. I am also informed that if the price of the shares had been higher I should still have lost my £20. I have bought my experience; I give this free to my professional brothers.

TREATMENT OF DIABETICS AS OUT-PATIENTS.

DR. C. J. C. EARL (Royal Hospital, Salford) writes: Dr. Lawrence, in his interesting comment (JOURNAL, May 14th, p. 897) on my article under the above heading, claims that most cases of diabetes should be treated as out-patients from the start. I must disagree with him—firstly, upon the grounds that our circumstances are not analogous, and that the daily attendance of patients to which he refers is impossible in a busy provincial hospital such as this. Furthermore, apart from its disciplinary advantages, in-patient treatment allows insulin to be pressed to a degree quite impossible in out-patients, with a consequent increase in the degree of "pancreatic rest" obtained.

BREATHING EXERCISES WITH MOVING ARMS.

WITH reference to the criticism by Surgeon Commander H. Hill, R.N., of the practice of moving the arms during breathing exercises (JOURNAL, March 5th, p. 422), Dr. D. M. B. Evans (Bolingbroke Hospital, Wandsworth) writes to suggest that the efficient co-operation of the vascular system is a necessary part of the function of respiration. The output of the right side of the heart depends largely on the rate of the heart beat, and this, according to Bainbridge's law, varies directly with the amount of blood entering the venous side. Muscular activity entails an increased peripheral distribution of the blood. When the activity ceases the return of the blood to the heart is improved by steady compression of the veins by the muscles, and, on occasion, by gravity—illustrated best in cardiac embarrassment. Thus the venous input is increased by steady leg or arm movements during respiration; the heart beats become more efficient; and the physiological demand for increased oxygenation is better met. This, Dr. Evans considers, is the only real objective of deep breathing. Moreover, the essential muscles of respiration benefit by their active contraction against resistance. The slight giddiness caused by simply expanding the chest wall, after exercise, without movements of the limbs, can be experienced by anyone, and witnesses sufficiently to the very important vascular side of respiration. The chest wall is only capable of a certain maximal expansion, which can be achieved despite any opposition by the extra-respiratory muscles.

VACANCIES.

NOTIFICATIONS of offices vacant in universities, medical colleges, and of vacant resident and other appointments at hospitals, will be found at pages 36, 37, 40, 41, 42, and 43 of our advertisement columns, and advertisements as to partnerships, assistantships, and locumtenencies at pages 38 and 39.

A short summary of vacant posts notified in the advertisement columns appears in the *Supplement* at page *219*.

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